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ABSTRACT

This bulletin examines the causes of the fertility decline in Sweden and the concerns and ambivalence of Swedes about zero population growth (ZPG). The fertility decline is attributed to many causes. In recent years there has been a drop in marriage rates and a sharp increase in non-marital cohabitation. The decline is also related to the increasing education and escalating employment rates among women. Other causes include the increased availability of effective contraception and legal abortion. If fertility remains below replacement at 1.8 births per woman and immigration balances emigration as now projected, the proportion of persons 65 and older will rise from 16 percent in 1977 to 20 percent of the population in 2025, higher than has been conjectured for a ZPG society. Financing retirement and medical benefits for the elderly already demands nearly half of the large total spent on social welfare and is escalating. Since World War II Sweden has welcomed refugees and until the 1970s encouraged immigration to fill labor needs. Integrating newcomers into the historically homogeneous society has caused problems despite conscientious policy efforts. Reducing immigration could mitigate these problems but could also mean an earlier and faster population decline than now projected. (Author/RM)

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Abstract—Despite a wide range of family supports, Sweden's birth rate was down virtually to its death rate in 1979 and its population is projected to decline from 1986 on. This *Bulletin* examines the causes of the fertility decline and the concerns and ambivalence of Swedes about zero population growth, reminiscent of the 1930s when birth rates also fell to record lows, and which they now share with others of their European neighbors. The fertility decline is related to a drop in marriage rates and sharp increase in non-marital cohabitation, increasing education and escalating employment rates among women, the cost of children in the face of high tax burdens and living costs, and increased availability of effective contraception and legal abortion. If fertility remains below replacement at 1.8 births per woman and immigration balances emigration as now projected, the proportion of persons 65 and older will rise from 16 percent in 1977 to 20 percent of the population in 2025, higher than has been conjectured for a ZPG society. Financing retirement and medical benefits for the elderly already demands nearly half of the large total spent on social welfare and is escalating. Since World War II Sweden has welcomed refugees and until the 1970s encouraged immigration to fill labor needs. Integrating the newcomers into the historically homogeneous society has caused problems despite conscientious policy efforts. Reducing immigration could mitigate these problems but could also mean an earlier and faster population decline than now projected. By 1979, the low population growth rate of 0.2 percent was entirely accounted for by net immigration plus natural increase among immigrants. Among Swedish citizens, who still make up all but some 425,000 of the 8.3 million population, there were fewer annual births than deaths from 1976 to 1978.

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Sweden Faces Zero Population Growth

By Murray Gendell

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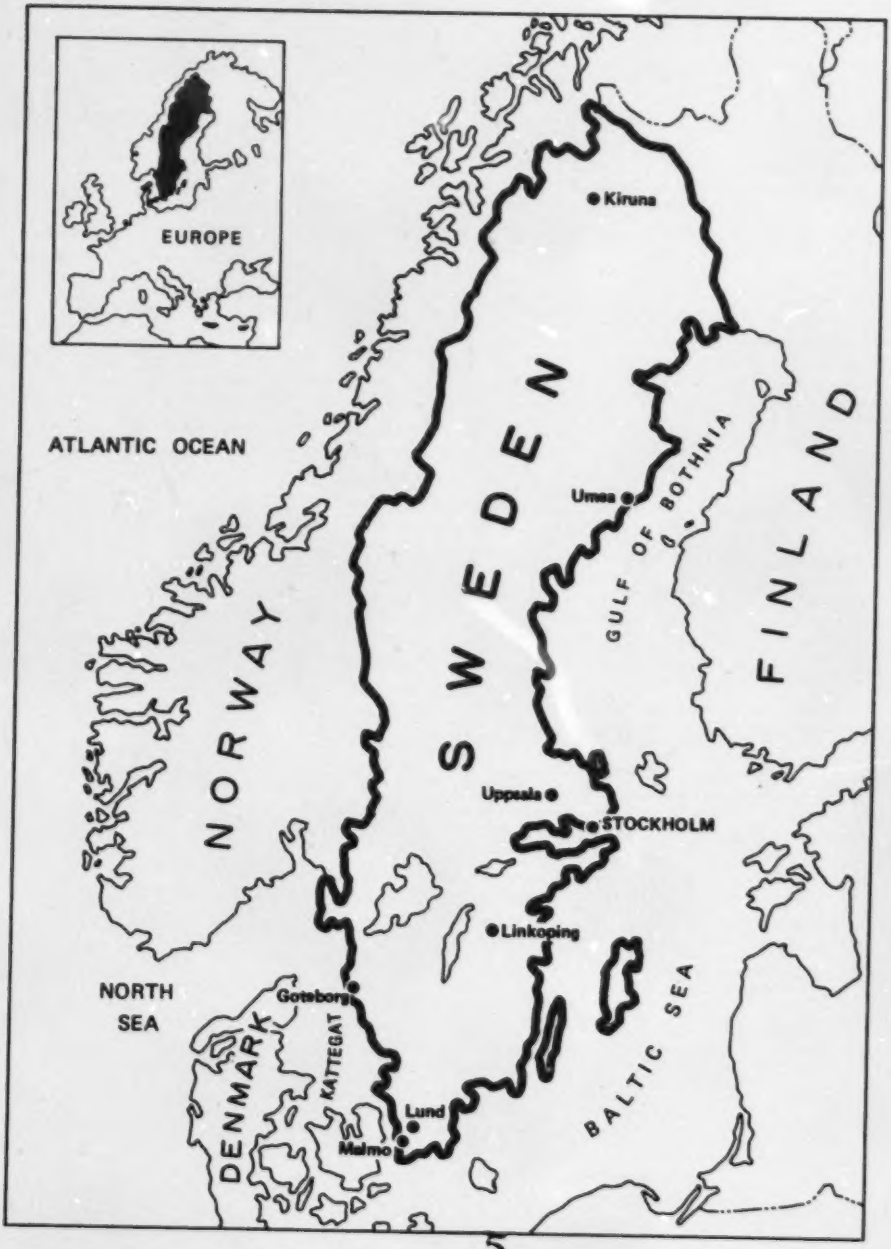

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Sweden Faces Zero Population Growth

By **Murray Gendell**
Georgetown University

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Dr. Gendell acknowledges the assistance of the staff of the Swedish National Central Bureau of Statistics in providing material for this Bulletin, *particularly Mr. Arne Arvidsson and Dr. Anne-Marie Bolander. Mr. Dag Swenson of the National Board of Health and Welfare and the staff of the Swedish Embassy in Washington, D.C., were also helpful. Dr. Gendell is also grateful to his colleague Conrad Taeuber for useful comments on the manuscript and to the editor of the* Population Bulletin, *Jean van der Tak, whose patience was as great as her energy and enthusiasm.*

Located in Northern Europe on the eastern half of the Scandinavian peninsula, Sweden shares boundaries with Finland to the east and Norway to the west, with Denmark close by across the Kattegat Sea to the southwest. Its land area is about the same as California's and population density a low 52 persons per square mile, compared to 61 in the United States. The 1980 population is estimated at 8.3 million people (a little less than that of North and South Carolina). Virtually the entire population lives in the southern half of the 1,000-mile-long country and 83 percent in "densely populated areas" of at least 200 persons.

Historically, Sweden's population has been extremely homogenous. The only ethnic and linguistic minorities residing in the country for any length of time have been the Lapps, now numbering about 10,000, a Finnish-speaking group of some 40,000 in 1970, and a few thousand gypsies. Officially, all but a few percent of Swedish citizens are Protestants belonging to the Lutheran state church, but Sweden is a very secular society; in 1968, for example, only 2 percent of the population attended church at least once a week. The country is a constitutional monarchy with a long tradition of parliamentary government. A one-house parliament replaced the two-chamber system in 1971. The Social Democratic Party held the majority in the government for 44 years until 1976, the longest governmental dominance of any European political party in this century. Since then the parliamentary majority has been held by varying coalitions of right-of-center "bourgeois" parties.

For the outsider, Sweden provokes a mix of admiration, envy, and curiosity. Its infant mortality rate is lowest in the world and life expectancy surpassed only by that of Iceland. The country has managed to remain aloof from all wars since 1814 and is abundantly endowed with such valuable natural resources as

iron ore, timber, and hydroelectric power. Its people enjoy the world's seventh highest per capita income ($10,210 in 1978, ahead of the U.S. at $9,700), no slums and little poverty, an unemployment rate of 2 percent, and one of the world's most comprehensive systems of social welfare. A wide range of child and family allowances, health provisions, free education through university, and retirement benefits protect its citizens and foreign residents alike from cradle to grave. And Sweden has been a forerunner in promoting equality for women.

It has also been a forerunner in changing lifestyles. By 1978, Sweden led all industrialized countries in the proportion of cohabiting couples who were unmarried (15 percent) and the percentage of total births borne out of wedlock (36 percent). But socially, as well as legally, Sweden has erased all distinctions between children born in or out of wedlock.

Sweden is also among the dozen or so European countries where annual births have now dropped virtually to or below the numbers of annual deaths. Its unease with this state of affairs, like that of several of its neighbors, may presage concerns which the prospect of zero population growth could arouse among other developed countries, such as the U.S., where fertility is now below the level needed to replace the population in the long run. (Twenty-four countries population currently have a replacement-level total fertility rate of 2.1 births per woman or lower.* For some, such as the U.S. where the total fertility rate in 1979 was about 1.85,[1] such a low rate is a recent phenomenon. Past higher levels of fertility, like the baby boom, mean that there are still considerably more people in or about to enter the childbearing ages than there are at older ages. It will take several decades of sustained fertility at two births or fewer per woman before the disproportion in the relative size of different age cohorts disappears and annual births—persons "entering" the population—come down to the level of annual deaths—persons "leaving" the population—and the population stops growing from "natural increase." In most Northern and Western European countries, however, fertility has been low enough for long enough that zero population growth—leaving immigration out of account—is already here, or all but. Fertility has recently risen *above* replacement level in Eastern Europe, except for East Germany and Hungary, in response to deliberate pronatalist government policies. Fertility has also taken a turn upward in the U.S.S.R. and now stands at about 2.4 births per woman because of continued high fertility among Central Asian non-Russian peoples who comprise an increasingly large portion of the total U.S.S.R. population.)

Birth rates also fell to record lows in Sweden in the early 1930s during the Depression as they did in most industrialized countries. Sweden's response then was characteristically groundbreaking. The 1934 publication of *Crisis in the Population Issue* by Gunnar and Alva Myrdal touched off a public debate concerning the threat of "self-perpetuating liquidation of the people." Two successive government commissions on population were appointed to make recommendations aimed at promoting a level of fertility which "would keep the population in the long run at least constant, with mortality as low as possible." The programs that resulted, however, were set within a broader social and economic context that still stands as a model for governments concerned about the total quality of life of their peoples.

Measures adopted by Sweden's parliament in the late 1930s and 1940s to strengthen the family (and, coincidentally, fertility) included child, marriage,

*Canada and the United States, in North America; in Europe: Austria, Belgium, Denmark, Finland, France, East Germany, West Germany, Hungary, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Sweden, Switzerland, United Kingdom, Yugoslavia; and Australia and Japan. Plus two less developed countries: Cyprus and Singapore.[2]

CORRECTION ON PAGE 4, LEFTHAND COLUMN, BOTTOM PARAGRAPH

Note line missing from the first sentence inside parentheses:

(Twenty-four countries
containing 16.3 percent of the world's
population currently have a replace-
ment-level total fertility rate of 2.1
births per woman or lower.*

and housing allowances, low-cost (and now free) maternity and child health services, maternity benefits, day-care centers, free school lunches, and guaranteed job security for women workers who marry or become pregnant. At the same time, steps were taken to eliminate unwanted childbearing: most restrictions on contraception were repealed, the abortion law was substantially liberalized, and sex education was introduced in schools.

Whether or not encouraged by these policies, birth rates rose in Sweden during the 1940s and again in the 1960s as in most European countries and population concerns subsided. By the mid-1970s, however, concerns flared again as fertility fell well below replacement level. At the same time, the death rate rose slightly. In 1979, the crude birth rate was 11.6 and the death rate 11.0 per 1,000 population (compared to 15.8 and 8.7, respectively, in the U.S.). Sweden's current "medium" official projection foresees a steadily declining population as from about 1986.

The new public and parliamentary debate focuses on the consequences of sustained low fertility for the proportion of elderly people who must be supported and the role played by immigration in population growth. If fertility remains below replacement as now projected, the proportion of persons 65 and older in the population is due to rise from today's 16 percent to 20 percent in 2025. Costs of generous retirement and medical benefits for the elderly already make up close to half of Sweden's very large social welfare bill and are escalating much faster than those for other items in that bill. Immigration plus natural increase among immigrants accounted for nearly half of Sweden's population growth from 1944 to the mid-1970s and by 1979 accounted for all of the low annual growth of 0.2 percent. Among Swedish citizens, there have been fewer births than deaths every year since 1975. Following World War II and until the 1970s, Sweden needed foreign workers to maintain economic expansion and, in line with its well-known humanitarian instincts, welcomed substantial numbers of refugees. However, integrating the newcomers with their different languages and cultures into the formerly highly homogeneous Swedish society has presented problems which have not yet been successfully resolved, despite a far-ranging, conscientious policy effort. Reducing immigration would mitigate these problems and, indeed, controls on non-Nordic immigrants have been tightened. But if immigration is now discouraged and fertility remains low among native Swedes, the country's population may well decline sooner and faster than projected.

In a world beset by rapid population growth, many Swedes are uncomfortable at the thought of stimulating population growth at home. Sweden was a pioneer in the international family planning movement and the first developed nation to provide family planning assistance to the less developed world (beginning with a pilot project in Ceylon in 1958). Nevertheless, low fertility has increasingly captured the attention of the press and parliament in recent years. No new legislation designed to influence population growth trends has so far been enacted but, if the birth rate continues to fall, such action seems likely.

To set these concerns in context, this *Bulletin* opens with a sketch of Sweden's past population growth and as projected for the future. Recent trends in fertility and marriage are then described along with the changes in women's status and availability of modern contraception and legal abortion that have probably influenced them. Sections follow on mortality trends, the aging of the population and the problems this causes, and on immigration trends and policy. The conclusion takes a closer look at the current population debate and the extent to which Sweden's situation resembles what might be expected of a "ZPG" society.

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Table 1. Components of Population Growth in Sweden: 1751-1979

Year	Number per 1,000 population							Mean population for period or at end of specified year (000s)
	Births	Deaths	Natural increase	Immigration	Emigration	Net migration	Population increase[a]	
1751-1800	33.6	27.4	6.2				5.5	2,066
1801-1850	32.2	23.9	8.3				8.1	2,790
1851-1900	30.0	18.5	11.5		4.2		7.6	4,343
1901-1950	19.4	12.5	6.9	1.6	2.0		6.4	6,001
1955	14.78	9.45	5.33	4.14	1.75	2.39	7.53	7,290
1960	13.66	10.04	3.62	3.49	2.02	1.47	4.79	7,498
1965	15.88	10.11	5.77	6.41	2.07	4.35	10.00	7,773
1970	13.70	9.95	3.75	9.61	3.56	6.05	9.83	8,081
1971	14.14	10.21	3.93	5.26	4.88	0.38	4.30	8,115
1972	13.82	10.35	3.47	3.68	5.12	−1.44	1.93	8,129
1973	13.48	10.53	2.95	3.62	4.96	−1.34	1.48	8,144
1974	13.46	10.58	2.89	4.59	3.47	1.11	3.91	8,177
1975	12.65	10.77	1.88	5.39	3.33	2.06	3.87	8,208
1976	11.96	11.03	0.93	5.53	3.10	2.43	3.34	8,236
1977	11.64	10.69	0.95	5.33	2.55	2.78	3.70	8,267
1978	11.27	10.84	0.43	4.37	2.68	1.69	2.08	8,284
1979	11.56	10.97	0.59	4.46	2.77	1.69	2.29	8,304

Sources: 1750-1950: National Central Bureau of Statistics (NCBS), *Historical Statistics of Sweden*, Part I: *Population 1750-1950* (Stockholm: 1955) p. 37; 1955-1978: NCBS, *Population Changes 1978*, Part 3 (Stockholm: 1980) Tables 1.1 and 2.1; 1979: Press release from the NCBS in *The Swedish American Newspaper* (Chicago), January 23, 1980, p. 1.

[a]Natural increase plus net migration should equal population increase. Minor discrepancies are due to transfers of persons with "residence unknown" to and from the population register.

Population Growth in Perspective

Sweden, together with Finland, has been collecting national population statistics continuously since 1749, longer than any other country in the world. The population totaled just under 1.8 million at that time. For the next two centuries it grew at an average long-run rate of about 7 per 1,000 people or 0.7 percent per year, a rate that doubles a population's numbers in 100 years. Thus in 1850 the population was 3.5 million and doubled again to 7.0 million a century later in 1950. Since then, the growth rate has varied widely, with low levels being reached in the 1970s. In 1979 it stood at just 2.3 per 1,000 or 0.2 percent, as seen in Table 1. Sweden's 1980 population is estimated at 8.3 million.

Population growth is determined by the difference between annual births and deaths (natural increase) and between immigrants arriving in a country and people moving out (net migration). Shifting trends in these four factors have added up to considerable fluctuations in Sweden's historical population growth even though that growth has averaged out broadly to about the same over most of the two and a quarter centuries since 1750. Table 1 gives the details on rates of natural increase, net migration, and

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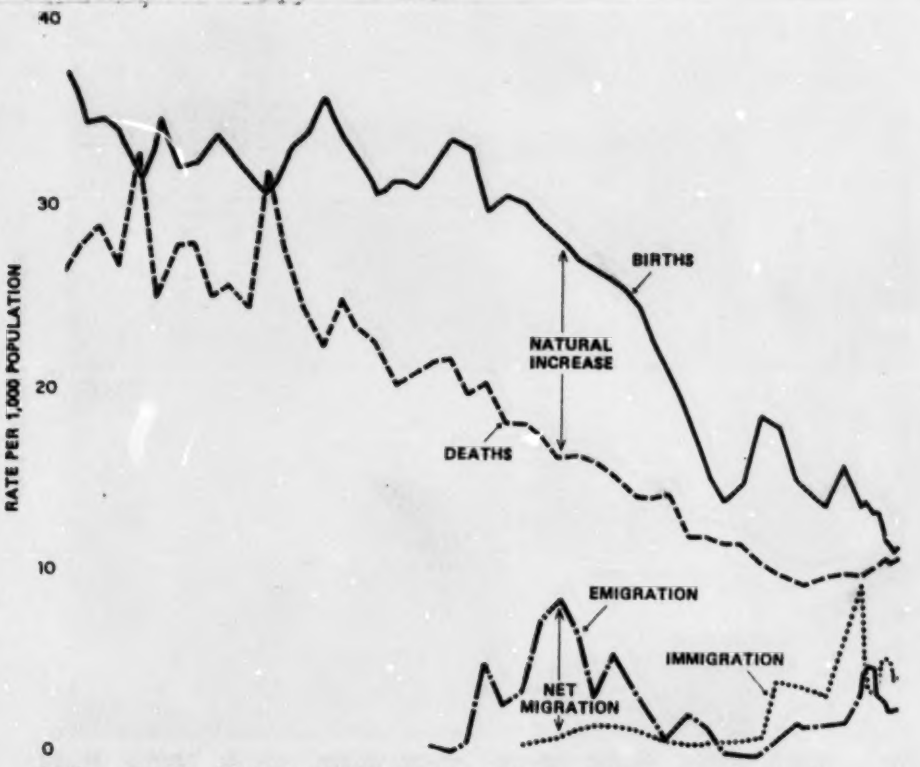
total population increase together with population size by half century from 1751 to 1950 and for specified years since then. The trends in birth, death, and migration rates are illustrated in Figure 1.

From 1751 to 1800, the birth rate averaged a relatively high 34 per 1,000 population (similar to the current rate in Mexico, for example, where the birth rate has fallen sharply in recent years) and the death rate was only about 6 points lower. (There is no reliable estimate of migration until the mid-19th century.) The next half century saw the start of Sweden's long-term demographic transition from high to low birth and death rates. The death rate began its sustained decline (although this was interrupted by epidemics as seen in Figure 1), initiating the rapid-growth phase of the transition. But the drop in mortality was modest, and with the birth rate also falling slightly, the rate of natural increase went up only from 6 to to 8 per 1,000.

It was in the latter half of the 19th century that the rate of natural increase

Figure 1. Birth, Death, Immigration, and Emigration Rates: Sweden, 1751-1979



Source: Carl Johan Åberg and Allan Nordin, *Befolkning och ekonomi* [Population and the Economy] (Stockholm, Trygg-Hansa, 1977) Diagram 3.1., p. 23, updated from data in Table 1

accelerated to its half-century peak of 11.5. As a result, "overpopulation" built up in the poor rural areas, as in many other European countries at the time. The response was an epidemic of "America fever"—particularly during the 1880s and 1890s. With the large volume of emigration, the actual rate of population growth averaged just under 8 per 1,000 from 1851 to 1900, about the same as in the preceding half century. Another important development during this period was the beginning of the sustained decline in fertility, about 1880.[3]

The main features of Sweden's demographic history since 1900 are a continuing fall in the birth rate to very low levels, relieved by some upward movement in the 1940s and 1960s, and a marked shift in the migration balance from emigration to immigration, particularly after World War II.

During the economic depression and mass unemployment years of the 1930s, emigration dwindled to virtually zero, immigration was scarcely higher, and the birth rate dropped to a low of about 14 per 1,000. With the death rate down to 11.7 per 1,000 by this time, population growth averaged a very low 0.4 percent per year.

The birth rate climbed again with improving conditions in the 1940s and again in the early part of the 1960s. Since the 1965 level of close to 16 per 1,000, however, it has dropped almost uninterruptedly, reaching an alltime low of 11.3 in 1978 and then rising a bit to 11.6 in 1979. (The lowest recorded birth rate prior to this was 13.7 in 1933 and 1934.) The death rate, meanwhile, after fluctuating around 10 per 1,000 in the 1950s and 1960s, rose after 1970, despite continued declines in age-specific death rates. This is because an increasing proportion of Sweden's population is now composed of the elderly among whom death is more likely. In 1979, the death rate stood at 11.0 per 1,000. Thus Sweden's rate of natural increase in 1979 was 0.59 per 1,000 population, or less than 0.1 percent.

This low figure is matched by most of Sweden's neighbors. Natural increase averaged 0.1 percent in Northern and Western Europe in 1978. The only major exceptions were Iceland at 1.2 percent and Ireland at 1.1 percent. Although also dropping in other developed regions of the world, the rate of natural increase in 1978 was a higher 0.7 percent in Southern and Eastern Europe and in Canada and the United States. In the U.S.S.R., Australia, and New Zealand, it was 0.8 percent, and in Japan, 0.9 percent. In *less* developed countries as a whole, natural increase now averages 2.0 percent.[4]

That Sweden's population growth rate has not yet turned negative is thanks almost entirely to immigration. Immigration began to outstrip emigration already in the 1930s, but not substantially so until after World War II when the economy began to expand and Sweden sought workers from abroad (see Figure 1). Since 1950 there has been a net migration gain every year except 1972 and 1973. Fluctuating with the Swedish business cycle, the gain has ranged generally between 1.0 and 2.5 per 1,000 population. From 1944 through 1977, 29 percent of the Swedish population growth of 1.74 million was accounted for by net immigration. The natural increase of the immigrants, it has been estimated, produced an additional 17 percent of the growth. Thus, almost half of Sweden's population increase between 1943 and 1978 resulted directly or indirectly from net immigration. And during the 1970s, with natural increase reduced almost to zero, the net gain from international migration has come to account for much more of population growth than has natural increase. This is unprecedented.

Population projections 1978-2025

In its most recent population projections, the Swedish National Central

Bureau of Statistics uses three alternative assumptions in projecting fertility and two in estimating future migration.[5] Only one trend was selected for mortality, since it was assumed that age-specific death rates would remain unchanged from 1977, except for slight declines between 1977 and 1985 among men over 80 and women older than 50. As a result, average life expectancy is projected to increase only from 72.1 in 1977 to 72.2 years in 1985 for males and from 77.9 to 78.6 for females and remain constant thereafter.

One of the migration assumptions supposes an annual net gain of 10,000 throughout the 1978-2025 projection period, resulting from an annual immigration of 35,000 and emigration of 25,000. The other alternative assumes the same annual gain for 1978-1984 but zero net immigration from then on as a result of an annual balance of 30,000 immigrants and 30,000 emigrants. This second alternative is regarded as more likely.

The medium and main alternative for fertility assumes that the total fertility rate (TFR) will increase from 1.64 births per woman in 1977 to 1.80 in 1985 and remain constant thereafter to 2025. (The total fertility rate is explained in the next section.) The high alternative calls for the TFR to increase to 2.1 (the replacement level) by 1985 and the low alternative assumes a continued decline to 1.5 by 1985. Both would then stabilize at those levels to the end of the projection period.

The effect of the main assumptions (a TFR of 1.8 and zero net immigration) is that Sweden's population is expected to inch up only from 8.27 million at the end of 1977 to a maximum of 8.36 million by the end of 1986. From then on the numbers would decline, reaching 8.27 million—the 1977 figure—by the beginning of the next century. Then the decline would accelerate so that by 2025 there would be less than 7.8 million people in Sweden. If the low 1.5 TFR assumption were to materialize, with no net immigration, there would be 7.9 million by the turn of the century and less than 7 million by 2025. With an annual net immigration of 10,000, these totals would be larger by about 200,000 in 2000 and 400,000 in 2025.

To fill in the details of this population picture, we turn first to recent fertility trends.

Fertility Trends

As noted, Sweden's crude birth rate (CBR) fluctuated after the lows of the early 1930s: up during the 1940s, down again somewhat in the 1950s, and up in the early 1960s. Since 1964 it has fallen almost uninterruptedly from just over 16 births per 1,000 population to 11.6 in 1979.

The crude birth rate is determined by the number of women in the childbearing ages—ages 15 to 44 or 49—and by the rate at which these women reproduce. The number of annual births per 1,000 women in the childbearing ages is called the general fertility rate (GFR). The decline in Sweden's CBR since 1964 has resulted from a pronounced drop in the GFR. In 1956-60, the GFR was 71.2 births per 1,000 women aged 15-44. It then rose to about 79.5 in 1964-66. But by 1978 it had fallen to 56.7. (In the United States in 1978, the GFR was 66.4.) Because of the higher birth rates of the 1940s, the number of women in the reproductive ages began to rise as from the mid-1960s. If the GFR had remained constant at the 1964 level of 79.5, there would have been 131,000 births in 1978 rather than 93,000—about 40 percent more. Correspondingly, the CBR would have been 15.9 per 1,000 population instead of 11.3.

A better measure than either the crude birth rate or the general fertility rate for tracing fertility trends over time is the total fertility rate (TFR). This measure is the sum of the rates at which women in each single year of age from ages 15 to 44 or 49 bear children in a

Table 2. Age-Specific and Total Fertility Rates of Swedish Women: 1901-1978

(Births per year per 1,000 women)

Period or year	Age of women							Total fertility rate per 1,000	Total fertility rate per woman
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
1901-05	15.9	119.5	193.3	193.6	159.7	87.8	11.4	3,906	3.9
1906-10	18.9	121.9	186.3	186.5	149.3	78.9	10.0	3,759	3.8
1911-15	19.5	113.3	163.3	158.3	130.4	69.2	8.1	3,331	3.3
1916-20	16.9	105.5	148.7	140.0	111.0	58.7	7.3	2,941	2.9
1921-25	17.9	97.2	132.2	120.3	93.5	48.2	6.0	2,577	2.6
1926-30	17.8	83.0	106.3	95.0	72.6	36.5	4.4	2,078	2.1
1931-35	17.8	76.2	93.4	80.8	56.1	25.7	3.0	1,765	1.8
1936-40	19.9	83.6	100.4	83.2	53.4	21.8	2.3	1,823	1.8
1941-45	25.6	111.4	134.0	107.5	66.8	23.6	1.9	2,354	2.4
1946-50	36.4	127.4	138.0	103.1	62.1	22.0	1.8	2,454	2.5
1951-55	37.8	128.2	128.3	86.8	47.8	15.9	1.3	2,231	2.2
1956-60	36.7	132.5	136.9	85.5	42.3	12.9	0.9	2,239	2.2
1961-65	42.8	136.9	148.9	87.6	39.3	10.7	0.7	2,335	2.3
1966-70	41.9	127.2	137.3	77.1	32.2	7.6	0.5	2,119	2.1
1971-75	32.0	121.8	128.7	67.0	23.6	4.7	0.2	1,890	1.8
1975	28.8	115.0	123.3	64.1	20.7	3.7	0.2	1,779	1.8
1976	25.0	107.1	118.8	62.4	20.5	3.6	0.2	1,688	1.7
1977	22.1	103.6	117.9	61.5	20.7	3.6	0.2	1,648	1.6
1978	19.2	97.1	116.0	62.4	21.6	3.7	0.1	1,601	1.6

Sources: 1901-1975: National Central Bureau of Statistics, *Population Projection for Sweden 1976-2000 (Information i prognosfrågor 1976:3)* (Stockholm: 1976) p. 11; 1975-1978: National Central Bureau of Statistics, *Population Changes 1978*, Part 3 (Stockholm: 1980) Table 3.16.

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given year (or the sum of the rates by five-year age groups multiplied by 5). Since these age-specific rates are all expressed as the number of births per 1,000 women in each age category, the TFR—unlike the GFR—is not influenced by how many women there happen to be in a given year in the 20-29 year-old age group, the ages at which age-specific fertility rates are generally highest. Nor is the TFR influenced by how many women there are altogether aged 15 to 44 or 49 in that year, which affects the crude birth rate.

From Table 2 we see that Sweden's TFR fell from 3,900 per 1,000 women 15-49 years old at the beginning of the 20th century to less than half that rate, about 1,800, during the 1930s. It then rose to a peak of 2,450 in the late 1940s, sagged a bit in the 1950s, and climbed back to over 2,300 in the early 1960s. It has been falling ever since. In the early 1970s, the TFR was about 1,900. By 1978, it was down to an all-time low of 1,600, or 1.6 per woman. (The U.S. total fertility rate in 1978 was 1,765 per 1,000 women aged 15-44, or just below 1.8 per woman.)

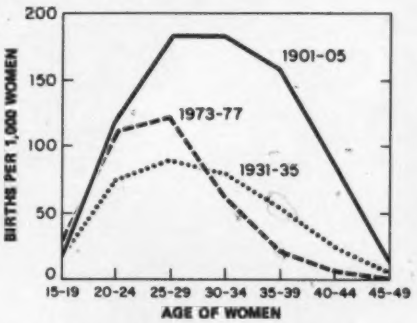
If Swedish women were to continue to bear children at the rate that all women in the reproductive ages actually did in 1978, each would end up with an average well below the level necessary to exactly replace each adult in the population. An annual TFR of 2.1 children per woman would have to be sustained in order for births and deaths to be in balance under the low mortality conditions prevailing in Sweden, leaving migration out of account. (Why not 2.0—one child for each parent? Because, to ensure replacement, every woman on average must have a daughter and for every 100 female babies born alive in Sweden there are 106 male infants born alive, an average of 206 boys and girls per 100 women, or 2.06 per woman. In addition, compensation must be made for the few female infants who fail to survive to reproductive age.)

The TFR was also below replacement level in the 1930s but rose above replacement in the next three decades. The current TFR of about 1.6, however, is more than 10 percent below the 1.8 of the 1930s and one wonders if Sweden's TFR will again climb to replacement level. As we have seen, the current "medium" official population projection, regarded as the most likely, assumes that the TFR will rise slightly to 1.8 in 1985 and remain constant thereafter. If that happens, overall annual births would dip below deaths already in 1986 and if the loss is not made up by net immigration, the country's population would begin to decline.

Childbearing concentrated

Table 2 also shows that the age pattern of Swedish women's fertility has changed markedly. By the 1970s, childbearing had become concentrated among women in their twenties. Except during the 1940s, age-specific fertility rates among women 35 and over have declined steadily throughout the 20th century and were almost nil among women in their forties by the early 1970s. Although not quite as pro-

Figure 2. Age-Specific Fertility Rates: Sweden, 1901-05, 1931-35, 1973-77



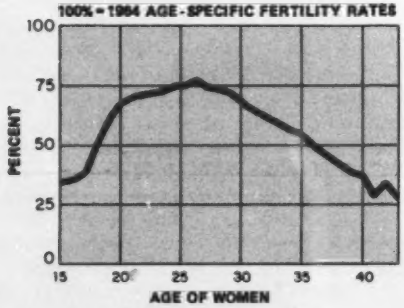
Source: National Central Bureau of Statistics, *Population Projection for Sweden 1978-2025 (Information i prognosfrågor* 1978:5) (Stockholm: 1978) Diagram 2.4, p. 12.

nounced, the decline was similar among women 30-34 years of age. Among women aged 15-19, fertility rates rose in the decades following the 1930s but by 1978 had fallen back to the low levels of the early 20th century.

As may be seen in Figure 2, the change between the beginning of the century and the low point of the early 1930s was mainly the large drop in the overall level of fertility. There was only a modest shift in the age pattern of childbearing toward women aged 20-29. Between then and the mid-1970s, however, fertility became markedly concentrated in this age group. The TFR was about the same in the 1973-77 period as in 1931-35.

Figure 3 shows details on this shift for 1964-77. For women aged 20-29, fertility rates in 1977 were about 75 percent of what they were in 1964. For older and younger women, however, the drop was much greater. By 1978, only 5.4 percent of total Swedish births were accounted for by teenage women, a remarkably low figure compared to the U.S. where 17 percent of all births in 1977 were to teenagers.[6] Two-thirds of all Swedish births in 1978 occurred to women in their twenties (Table 3). For mothers and babies, these are the most favorable ages for childbearing and this concentration has played a role in reducing the Swedish infant mortality rate to the lowest in the world (see later section on "Mortality Trends").

Figure 3. 1977 Age-Specific Fertility Rates as Percentage of 1964 Rates



Source: See Figure 2, Diagram 2.6, p. 13.

Cohort versus period fertility

The TFR for a given year or period is not the same as the completed fertility rate—the number of children which a group of women born at the same time (a birth cohort) actually had on average by the end of their childbearing years at about age 50. As seen in Figure 4, actual completed fertility in Sweden has hovered around 2 births per woman from the 1895 birth cohort onward. The level was below this for women born in the first decade of this century who were in their prime childbearing years during the Depression years of the 1930s and slightly higher for women born between 1920 and 1935 whose childbearing came mostly in the 1940s, 1950s, and early 1960s. It is too soon yet to know what the final average will be for women born from 1945 on. So far, however, they

Table 3. Distribution of Births by Age of Mother: Sweden, 1955-1978

(Percent of total births)

Age of mother	1955	1960	1965	1970	1976	1978
Under 20	7.8	9.5	12.1	8.3	6.6	5.4
20-29	55.7	57.9	62.1	69.9	68.0	65.6
30 and over	36.5	32.7	25.8	21.8	25.4	29.0

Sources: 1955-1976: United Nations, *Demographic Yearbook*, various editions; 1978: National Central Bureau of Statistics, *Population Changes 1978*, Part 3 (Stockholm: 1980) Table 3.3.

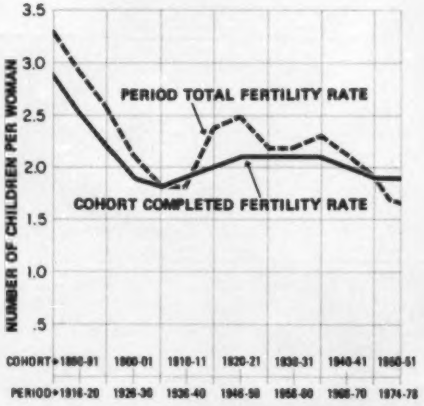
have had fewer births in their twenties than women born just before them and it is likely that they will average a completed fertility rate that is again just below 2 births per woman.[7]

Sweden's TFR has varied much more sharply than the cohort completed fertility rate, as also seen in Figure 4. In contrast to the *completed* fertility rate of a birth cohort of women, the TFR is a "period" measure which sums up the childbearing experience of all women from different birth cohorts who happen to be in the childbearing ages in that period or year. It is thus affected by the *timing* of cohort fertility, or the ages at which women are having children. Because the TFR reflects the birth rates of a particular period, it is more directly related to the rate of population growth of that period than the cohort completed fertility rate.

During the early 1930s, Sweden's TFR fell as a result of a decline in age-specific fertility rates at all ages, as seen in Table 2. As economic conditions improved, women who had delayed childbearing made up for lost time and age-specific rates rose among older women. For example, in 1931-35, women then aged 20-24 had a fertility rate well below the rate of women that age five years earlier—76.2 compared to 83.0 births per 1,000. Five years later (1936-40), these same women at ages 25-29 had a higher rate than women that age had had in the preceding five years—100.4 versus 93.4. And their fertility in 1941-45 at ages 30-34 was again higher than that of women born immediately before them—107.5 compared to 83.2.

Younger women (born in the 1920s) also responded to improved economic conditions in the later 1930s and 1940s with higher age-specific birth rates than women in their twenties had during the Depression. The result of this overlapping of the two age patterns of childbearing was an increased TFR during the 1940s—considerably higher than the completed fertility which these different

Figure 4. Period Total Fertility Rate and Cohort Completed Fertility Rate: Sweden, 1890-1978



Source: National Central Bureau of Statistics, *Barn—behov eller börda?* [Children—need or burden?], *Urval* No. 11 (Stockholm: 1979) Diagram 3.1, p. 34.

cohorts of women eventually had.

The downswing in the TFR in the 1950s was partly the result of the previous increase. Women who had advanced their childbearing into their twenties during the 1940s tended to offset this by lower age-specific fertility rates at older ages than women born just before them. The same trend probably explains something of the downturn in the TFR since 1964. Fertility rates among women in their twenties continued to increase until 1965 (Table 2) and were quite likely to decrease later among these same women as they grew older. Since 1965, however, the TFR has also been depressed by a decline in fertility rates among women in their twenties—those women born in the late 1940s and 1950s. It remains to be seen if this decline represents a delay in childbearing that will later be made up—as happened among older women in the 1940s—or if these women will end up with a completed fertility rate lower than that of any cohort before

them. Also uncertain is what the timing and level of fertility will be among women entering their childbearing years during the 1980s and 1990s.

Besides shifts in the timing of childbearing, another important demographic factor underlying TFR trends of the past four decades is Sweden's changing pattern of marriage.

Marital Status

In most societies births occur preponderantly within marriage and fluctuations in the proportion of men and women who are married, especially in the prime reproductive ages, have a considerable impact on fertility. The marked changes in this proportion in Sweden during this century parallel trends in the fertility rates.

Up through 1930, only one-fifth of women aged 20-24 were married and not quite half of women aged 25-29, as seen in Table 4. This reflects Sweden's long tradition of late marriage and much celibacy. During the next two decades, however, the proportion married doubled from 19 to 40 percent among women aged 20-24 and went up by half—from 48 to 72 percent—among women aged 25-29. A more modest increase took place during the 1950s. By 1960, more than three-quarters of women 25-29 were married.

Table 4. Percent of Women Married at Ages 20-24 and 25-29: Sweden, 1900-1978

Year	Age of women	
	20-24	25-29
1900	19.5	47.5
1910	20.1	48.2
1920	19.6	47.9
1930	19.4	47.7
1940	28.2	59.6
1950	39.8	71.7
1960	43.7	77.7
1970	38.2	73.2
1975	23.7	60.1
1976	22.6	57.7
1977	20.8	55.0
1978	18.8	52.0

Sources: National Central Bureau of Statistics (NCBS), *Historical Statistics of Sweden*, Part I: *Population 1720-1950* (Stockholm: 1955) pp. 25-26; NCBS, *Population Changes 1976*, Part 3 (Stockholm: 1977) Table 1.4; NCBS, *Population Changes 1978*, Part 3 (Stockholm: 1980) Table 1.4.

Beginning around the middle of the 1960s, there was a strong reversal back to old marriage patterns. By 1978, the percentage married in these two age groups had dropped to the levels of 1930. The 19 percent married among women 20-24 in 1978 is remarkably low compared to the United States where 51 percent of women that age were or had been married in 1979[8]—the lowest proportion on record for this country.

The shifts in the proportion married are reflected in age at marriage. In 1930, 25.2 was the median age of women at first marriage (half were younger and half older). By 1950, the figure was down to 23.9 and in 1960 it was 22.8. By 1978 it was back up to 24.9 (compared to 21.8 in the U.S. in that year).[9]

The increase in marriage between 1930 and 1960 accounts for much of the rise in age-specific birth rates of all women in their twenties in that period. The sharp fall in the percentage married at these ages since the mid-1960s has also had an appreciable effect, but in the opposite direction.

One reason for these effects is that the age-specific birth rates for all women are the weighted averages of the rates for married and unmarried women. In Sweden, as in most other countries, marital fertility rates among women 20-29 are much greater than the out-of-wedlock rates, as seen in Table 5, although the difference between them narrowed during the 1970s. From the late 1930s to the late 1960s, marital fertility rates for women remained essentially unchanged but because of the increase in the proportion married at these ages, the relative importance of these higher rates increased. As a re-

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Table 5. Marital and Non-Marital Fertility Rates for Swedish Women Aged 20-24 and 25-29: 1936-1978

(Births per year per 1,000 women)

Period or year	20-24		25-29	
	Unmarried	Married	Unmarried	Married
1936-40	25	261	17	170
1946-50	31	281	24	186
1956-60	30	267	26	172
1966-70	41	243	34	170
1971-75	68	247	62	161
1976	67	239	69	154
1977	67	237	71	155
1978	63	234	71	155

Source: National Central Bureau of Statistics, *Population Changes 1978*, Part 3 (Stockholm: 1980) Table 3.16.

sult, age-specific rates of all women 20-24 and 25-29 rose considerably in this period.

During the 1970s (through 1978), there was a modest fall in marital fertility rates for these ages and a steep fall in the proportion married. The resulting decline in age-specific fertility rates for all women—from 127 to 97 per 1,000 women aged 20-24 and from 137 to 116 for women 25-29 (Table 2)—would have been much greater if not moderated by a sharp rise in the rates for unmarried women. Fertility rates among unmarried women aged 20-24 rose from 41 to 63 per 1,000 between the late 1960s and 1978 and more than doubled from 34 to 71 among unmarried women aged 25-29 (Table 5).

Non-marital cohabitation

The decline in marriage in Sweden has not meant a commensurate decline in numbers of unions. Beginning sometime during the 1960s, there has been a rapid increase in the popularity of de facto unions. This is not a new phenomenon in Sweden. Consensual unions were quite common in some rural districts in the late 19th and early 20th centuries. They were also frequent among the poor in Stockholm, so much so that they were dubbed "Stockholm marriages."[10] How frequent such unions were throughout the country is not known.

As recently as the 1950s, however, only an estimated one percent of cohabiting couples in Sweden were unmarried. But at the end of the 1960s the proportion was up to 7 percent. The 1975 census reported about 11 percent, a figure the National Central Bureau of Statistics believes is probably too low. In 1978, a government report put the figure at 15 percent.[11] The sudden increase in de facto unions is not peculiar to Sweden but among countries for which there are recent estimates, the level is highest in Sweden. It was 13 percent in Denmark in 1977, 8 percent in Finland in 1978, and much lower, though increasing, in Norway, France, and the United States (2.3 percent in 1978).[12]

So far, non-marital cohabitation has been adopted mainly by young adults, as seen from the 1975 census data shown in Table 6. Among all persons living in a union, the proportion unmarried at ages 20-24 was more than double the level for those in their later

Table 6. Percent Unmarried of All Women and Men in Union: Sweden, 1975

Age	Women	Men
20-24	57	71
25-29	23	35
30-34	10	14
35-39	6	8
20 and over	11	11

Source: National Central Bureau of Statistics, *Barn—behov eller börda?* [Children—need or burden?], *Urval* No. 11 (Stockholm: 1979) p. 42.

twenties (57 compared to 23 percent for women and 71 versus 35 percent for men), and diminished rapidly with increasing age. Close to 30 percent of all women aged 20-24 were living in a nonmarital union in 1975 and only 22 percent were married. In 1965, 40 percent of women in their early twenties were married. (The 1965 census did not ask about non-marital cohabitation.) Among men aged 20-24, 19 percent were cohabiting and only 8 percent were married in 1975; 18 percent of men this age were married in 1965.[13]

Sweden has long had a permissive attitude toward premarital sex. This has its roots, according to Alva Myrdal, in a historical rural custom that tolerated premarital sexual relations under specific conditions such as "night courtship."[14] The permissive tradition was later enhanced by "the far-reaching secularization of Sweden that occurred along with industrialization in the late 19th and early 20th centuries," and particularly the egalitarianism of Swedish society. As sociologist Richard Tomasson puts it: "When women's roles are characterized by a high level of equality with men [as they are in Sweden]. . . . there is likely to be a permissive sex ethic."[15] And he points out that sex education—which now stresses the social and ethical as well as biological aspects of sex[16]—has been compulsory at all grade levels in Swedish schools since 1956.

These factors alone, however, can hardly explain why so many young Swedish couples have suddenly taken to actually living together without benefit of matrimony. Swedish demographer Erland Hofsten sees the "growing mobility" of the population, more available housing, and the "rapidly growing independence of women, visible in the increasing number of economically active women" as important in "making the situation ripe for a change in marriage habits."[17] But to explain the suddenness of the change, he adds, "we must obviously look for something which occurred in the late 1960s." Danish demographer Mogens Boserup stresses here the "new youth movement" which swept Western nations, challenging "traditional rules . . . with regard to social behavior."[18] More important, Hofsten feels, were liberalization of abortion and the introduction about this time of efficient contraceptives such as the pill, "easy to apply and available to all [which] imply that sexuality finally and conclusively is disassociated from procreation. When it becomes clear to young people that they can live together without any risk of an unwanted pregnancy, this must have consequences for the behavior of young men and women. Why marry, if a child is not planned anyway for the time being? And if it proves possible to live in a consensual union without marrying, why not continue to do so also after a child has been born?"[19]

That many young Swedish people may view cohabitation as trial marriage is suggested by a 1975 survey of unmarried couples in their twenties in the neighboring country of Denmark. About one-third said they regarded living together as a period of experimentation and about one-seventh indicated that it was economically an advantage; but another third simply felt legal formalities were unnecessary.[20]

Fertility among cohabiting Swedish

women is about half that of married women to judge from 1975 census data. The average number of children already born per woman was:[21]

Age	Married (living with husband)	Cohabiting
20-24	1.0	0.5
25-29	1.6	0.8
30-34	2.0	0.9

So long as informal unions are viewed as trial marriages and likely to be unstable, this differential is bound to persist. Thus the increasing preference for such unions, if it also persists, could further depress the birth rate.

Out-of-wedlock births

It would also mean a continued increase in the proportion of out-of-wedlock births. Only a tenth of births were out of wedlock in the 1940s and 1950s. The figure rose during the 1960s and was about 18 percent in 1970. In the next eight years there was a doubling to 36 percent in 1978.[22] This figure was a much lower 16 percent in the U.S. in 1978, although the proportion of out-of-wedlock births has also risen rapidly in this country in the past decade or so.[23]

It should be noted that the stigma attached to out-of-wedlock births has long been much less in Sweden than in the U.S. The stigma has weakened in both countries but the gap has not closed. Recording of births by legitimacy status is still required in most U.S. states but has been abolished in Sweden, for example. And Swedish children born outside marriage have the right to receive maintenance from both parents, inherit from both, and adopt either surname. They and their parents receive all social welfare family benefits. There is even an "advance allowance" of 4,700 crowns a year (about $1,100) paid to a child of unmarried (or divorced) parents who lives with only one of them, in case the other parent does not contribute at least this amount.

Divorce

A rapid rise in divorce up to 1975 undoubtedly also played a role in the birth rate decline. For every 1,000 married women aged 30-34, for example, there were 7.4 divorced in 1962, 7.9 in 1965, and 10.9 in 1970. Then the rate more than doubled to 24.5 in 1975 but subsided to 19.6 in 1978. An easing of the divorce law at the beginning of 1974 explains much of the acceleration in the mid-1970s. Divorces went up sharply from 16,000 to 27,000 between 1973 and 1974 and then fell back to 20,000 in 1978.[24] Cohabitation could help lower the divorce rate further in future years if this growing practice serves to prevent many couples from entering into incompatible marriages.

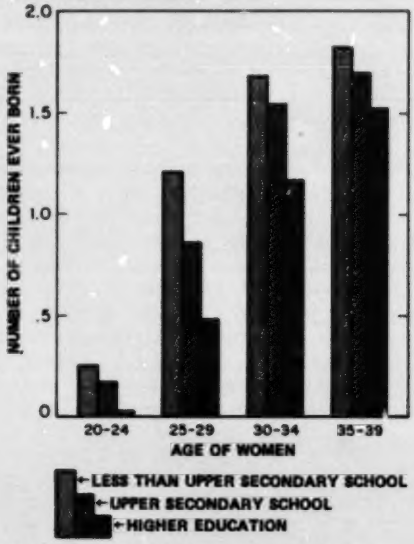
The late 1960s and 1970s have clearly been a watershed period in Sweden with the rapid retreat from legal marriage, the rise in informal unions (accompanied by inflation of the proportion of out-of-wedlock births), and increasing separation of sexuality from reproduction. These trends that have helped depress annual births virtually to the level of deaths are very likely related to the increase in women's education and particularly their increased employment outside the home.

Women's Changing Status

Wherever women's chances for education and gainful employment have come close to those of men around the world, lower birth rates have been the almost inevitable result. In stressing equal rights for women, Sweden has had few rivals.

One observer commented at the end of the 1960s: "A self-conscious ideological emphasis on equality between the sexes in work, education, and in all official areas characterizes Swedish society."[25] During the 1970s, two government committees on equality went

Figure 5. Average Number of Children by Women's Educational Attainment and Age: Sweden, 1976



Source: See Figure 4, Diagram p. 3.14, p. 75.

beyond this to encourage equality also in family life. Legislation has been enacted to encourage men to share childrearing responsibilities. The official theme is that "Both women and men must be enabled to play double roles, i.e. take active part in both family life and working life."[26] New programs have also been designed to draw more women into traditionally male occupations and more men into health and social services and preschool teaching.

In practice, the stress on equality has worked best in the educational sphere and less so in the work world and in the home.

Increasing education

Sweden has nine years of compulsory schooling from the age of seven and virtually all children are enrolled. Enrollment beyond that has increased sharply in the post-World War II period. Among 16-18 year-olds, the proportion attending school rose from 10 to over 60 percent between 1940 and 1970. And among young men and women aged 19-24, the percentage enrolled in colleges and universities went from a mere 5 percent to 30 percent in those 30 years.[27]

Women shared fully in those increases. By 1975, girls aged 16-19 averaged slightly more years of schooling (10.0) than boys that age (9.6).[28] And in both 1965 and 1975, girls were in the majority among new entrants to colleges and universities. Deliberate efforts are made to break down traditional sex-role differences. Boys and girls alike must study domestic science and child care as well as woodworking and metalwork in primary school and a 1975 government report urged that technology be compulsory for girls and that boys should be exposed to nursing in upper grades.[29] When they have a choice, however, young women still lean toward traditional "female" fields and in university tend to choose shorter courses than young men do.

Nevertheless, the continuing increase in educational attainment is likely to reinforce both the decline in fertility and the trend toward increasing proportions of working women. In Sweden, as in the U.S., the more education women have, the lower the average number of children (Figure 5). The relationship between education and employment is strongly positive. Eighty-four percent of women aged 25-64 with more than two years of college or university education were working in 1970 compared to only 54 percent of those with less than the nine compulsory years of schooling (Table 7).

Increasing employment

Women's employment rates have soared in all Western nations in the second half of the 20th century. But in Sweden, the flood of women into the paid work force

Table 7. Percent of Swedish Women Aged 25-64 in the Labor Force, by Educational Attainment: 1970

Educational attainment	Percent in labor force
Less than 9 years	54
At least 9 years	61
Upper secondary school	65
Up to 2 years college or university	72
More than 2 years college or university	84

Source: The Joint Female Labour Council, *Woman in Sweden in the Light of Statistics* (Stockholm: 1973) Table 3.7, p. 39.

has outstripped that of most countries.

In 1930, less than a third (31 percent) of Swedish adult women were working, and the proportion declined in the next two decades as marriage rates increased and it remained unfashionable for married women to work. After 1950, however, women's labor force participation rates escalated, reaching over 72 percent among women 16-54 in 1976. In the U.S. in 1978, the rate was 60 percent in the same age group.[30]

Married women and mothers have been in the vanguard of the change. In 1950, only 15 percent of married Swedish women were working or looking for work outside the home. By 1975, a quarter century later, that figure had quadrupled to 60 percent—considerably higher than the 48 percent of U.S. married women in the labor force in 1978. In Sweden, as elsewhere, the more children a woman has and the younger they are, the less likely she is to take a job away from home. Yet the employment rates of mothers of preschool children (under age seven) have increased more rapidly than those of all other women. From the mid-1960s to 1977, the proportion of such mothers who were working went up dramatically from 37 to 66 percent. In 1978 in the U.S., the rate for mothers of preschool children was 42 percent—also representing the swiftest rise in employment rates among all women in recent years.

Continued rapid increase in Swedish women's employment rates are expected. Among mothers aged 20-44 alone, for example, projections for proportions employed range from 72 percent (for those 35-44) to 81 percent (for those 25-34) as early as 1983.[31]

The long-run increase in Swedish women's employment is related to a number of demographic, social and economic changes. As birth and death rates declined, women have had more years to work outside the home after the last of their children passes the ages requiring most maternal attention and have lived longer to take advantage of these years. Women have been more in demand in the labor market as men's employment rates have fallen: with increasing education, young men have been starting work at later ages and after the introduction of pensions in the 1930s and 1940s, older men began retiring earlier than they once did. By 1976, women made up 43 percent of the labor force, up from 35 percent in only the six years since 1970.[32]

There has been tremendous growth in the kinds of jobs that traditionally appeal to married women or for which employers are most likely to hire women: public service jobs especially, office work, and jobs that permit part-time schedules. In recent years, day-care facilities have expanded and tax rules have been changed to permit couples to file separate tax returns, thus lowering their tax rate in Sweden's steeply progressive income tax scale. And with all these changes, coupled with the emphasis on equality for women, social attitudes have changed radically regarding the propriety of wives and mothers going to work outside the home.

Going to work, however, has not guaranteed women economic equality with men. This is primarily because Swedish working women—like their counterparts in the U.S.—are disproportionately

concentrated in less remunerative jobs. In 1975, close to half (49 percent) of women in the labor force were employed in relatively low-paying service jobs as secretaries and office workers, nurses, teachers, saleswomen, public health and social workers, and the like. Only 17 percent of employed men worked in the service sector. Just 5 percent of working women had "independent or managerial tasks" in 1975 against 50 percent of employed men.[33] In some professions, however, Swedish women comprise fairly high proportions to judge from the following comparisons with the U.S.:[34]

	Percent female	
	Sweden 1975	U.S. 1977
Lawyers	12	9.5
Physicians	23	10.6
Dentists	30	2.9
Pharmacists	82	17.4

Sweden has also made efforts to guarantee equal pay for equal work. Among industrial workers, for example, the average hourly wage earnings of women increased from 75 percent of men's in 1965 to 86 percent in 1974.

The Swedish Institute: Photo by Hans Hammarskiöld

An architect for the City of Stockholm. Swedish married women have flooded into the work force in recent years but relatively few hold well-paid professional jobs.

Constraints and Supports for Women's Dual Role

Clearly Swedish women—like their American sisters—are increasingly opting to both work and have children, just as official policy now holds that they should. Outside employment no longer appears to be as incompatible with motherhood as it once was. But there are still constraints to combining childrearing with employment that make it likely that most Swedish women will continue choosing to have only one or two carefully timed children.

Unlike the U.S., Sweden has a comprehensive public program of day care for small children for which parents pay from 3 to 25 crowns per day, depending upon income.* There are also "leisure centers" for before- and after-school care of older children of working parents, and kindergartens for six-year-olds were introduced in 1975. In 1965, there were places for only 23,000 children in such centers. Thereafter the number expanded rapidly and reached 221,000 in 1977, not including places in kindergartens for six-year-olds. In 1976, there were only 60,000 places in day-care centers for children under six. Plans called for adding 100,000 by 1980.[35] Doubtless the increase in child-care facilities had much to do with the enormous increase between 1965 and 1977 in employment among mothers of preschool children. But in 1977 there were 370,000 mothers of preschool-age children (under seven) in the labor force. Obviously, many of these women had to find other means of child care while they worked. (Sweden is nevertheless far better off in this respect than the U.S. where it is estimated that only 10 to 15 percent of preschool children of working mothers could be accommodated in—mostly private—day-care centers in 1978.[36])

1 Swedish crown = 24¢ approximately.

In theory, fathers are now encouraged to share childrearing responsibilities. Under a "parenthood insurance scheme" fathers now receive most of the child-care benefits guaranteed to mothers. Most conspicuous is paternity—or maternity—leave: eight months of leave after a child's birth at 90 percent of salary and another month at a minimum of 32 crowns (about $7.70) per day. Three months can be saved and spread out over the child's first eight years in the form of full or partial days off from work. Fathers as well as mothers can also take up to 18 days paid leave a year to stay home with a sick child, and fathers can receive "sickness" benefits to stay home with older children while their wives (or "cohabs") are in the hospital having a baby. Public offices and businesses are also being encouraged to allow both fathers and mothers of young children to shorten their work day or week at little loss in pay.

In practice, however, equally shared childrearing is still far from reality. In 1978, four years after it was introduced, only 10 to 12 percent of new fathers took paternity leave and most stayed home far fewer days than new mothers did. "A father on paternity leave is still considered an oddity," and a member of the parliamentary Committee on Equality of Men and Women has commented: "Changing attitudes is a very slow job."[37] Employers and the men themselves find it hard to juggle office responsibilities to allow for the part-time absence of men taking paternity leave—most of whom have so far been "well educated and well paid—and thus likely to hold responsible positions," according to a 1979 report to the *Wall Street Journal*. Thus the responsibility for home and children still falls largely on women. Most manage by taking only part-time (and lower paid) work. In 1978, 45 percent of Swedish employed women were working part-time, compared to only 6 percent of men in the labor force —and 29 percent of American working women (in 1980).[38] A 1976 Survey of

Swedish Information Service

Fathers are now encouraged to share in childrearing but, in practice, women still bear the brunt of child and home responsibilities.

Living Conditions revealed that husbands of full-time working women help with housekeeping chores more than those of women who work part-time, but in all households, women are still far more likely to do more of those chores than their husbands.[39]

Family allowances and housing

Sweden's "cradle-to-grave" social welfare scheme includes several other measures besides paid paternity/maternity leaves aimed at reducing the burdens of childbirth and rearing. Though first introduced during the low birth rate years of the 1930s, these measures are promoted not on demographic but on egalitarian grounds.

All women giving birth receive free medical care before, during, and after delivery. Most infant, preschool, and school child health care is free, and school children receive a free school lunch. A child allowance of 2,260

crowns ($540) per year is paid to parents for each child under 16. And for each child over 16 attending secondary school there is an annual allowance of 1,600 crowns. University students receive a state study grant of 16,500 crowns a year (nearly $4,000)—2,000 crowns as a scholarship and the rest as a loan. Families are eligible for a state housing allowance according to their income, number of children, and housing costs. For example, a family with two children and an annual income of 50,000 crowns which must pay out a quarter of that income for housing would receive an allowance of about 5,400 crowns a year. In 1974, almost half of all families with children and 90 percent of single parents received this allowance.[40]

The housing allowance is probably one of the most important measures for enabling families to afford additional children. Until recently, housing shortcomings could be seen as a major constraint on fertility in Sweden—both in the number of available dwellings and the size of living quarters. But the situation improved even as the birth rate fell.

Housing shortages were still severe in the 1960s, due to migration to towns, the need for reconstruction in older parts of the cities, and high construction costs. Two-thirds of dwelling units in the "densely-settled" areas where 83 percent of Swedes live were located in "multi-family buildings" or apartment houses in 1975. But, thanks to a special effort, by 1974 over half (56 percent) of families with preschool children and two-thirds (67 percent) of those with children aged 7 to 18 were living in single-family dwellings.[41]

Dwelling units have also increased in size. In 1960, there was an average of only 1.5 rooms per household, not including kitchens. By 1975 the average had doubled to 3 rooms.[42] Swedish families are now also far more likely than they once were to have enough bedrooms to ensure that nobody has to sleep in the living-room—a situation which Swedes, like Americans, are anxious to avoid.[43] Using census data on the number of rooms available in households of families with one, two, or three children and assuming that one of these rooms is a living-room and the rest bedrooms, we have calculated that only 40 percent of families had a separate bedroom for the parents and one for each child in 1960. By 1975, however, the figure was up to 67 percent.[44] In short, the housing situation must be much less of a constraint on fertility than it once might have been.

Birth Control

If Swedish couples are currently opting to have only one or two children, certainly efficient contraceptives and very liberal abortion are now available to help them attain this goal. In the past, as we have seen, late marriage and widespread celibacy were major ways of controlling fertility. But there is evidence that fertility was also controlled within marriage as far back as the early 18th century in some parts of Sweden. Withdrawal, abstinence, and (illegal) abortion were probably the main methods used until fairly recent times. To these were added homemade mechanical devices and, in the first decades of the 20th century, condoms and diaphragms.

The low birth rates of the 1930s are evidence that collectively these methods were effective, although probably with some psychic cost and, in the case of abortion, health risks. With today's birth control methods, Swedish couples are undoubtedly far better able to avoid having more children than they want. Indeed, a 1967 survey found that Swedish women actually had fewer children than they desired. The average ideal number then was 2.4: 1 percent wanted no children; 2 percent wanted one child; 56 percent, two children; 33 percent, three children; and 6 percent, four or more.[45]

Contraceptive methods and practice

Pills were introduced in Sweden in 1964 and IUDs were approved in 1966. The pill was popular right away but Swedish women did not adopt the IUD in significant numbers until the copper spiral was introduced in 1972. Until the 1970s, however, the most readily available of reliable contraceptives was the condom which can be obtained from supermarkets, pharmacies, and vending machines. Pills and IUDs required seeing a physician which meant a private visit at $20 to one of the only 450 gynecologists then practicing in the country or a long wait for appointments at understaffed maternity centers or one of the only two centers run by the Swedish Family Planning Association. In a 1967 national probability survey of 1,600 men and women who were married, engaged, or "going steady," 38 percent of respondents reported having used a condom during their most recent intercourse; 17 percent had used withdrawal and only 14 percent the pill and 1 percent an IUD. Some 27 percent used no contraception.[46] By 1976, it was estimated that about 70 percent of women of reproductive age were using contraception. This was about the same percentage as in 1967 but the methods used had changed radically: 30 percent used the pill; 20 percent, the IUD; 12 percent, the condom; and perhaps 10 percent, traditional methods (including withdrawal) or sterilization.[47]

Before 1976, sterilization was forbidden for men (except for medical purposes) and permitted to women only for medical, eugenic, or "socio-medical" reasons. A new Sterilization Act implemented in 1976 now allows sterilization as a form of birth control on request to any person 25 or older (and to those 18-24 years old with special permission). As a result, numbers of sterilizations jumped from the annual pre-1976 level of 1,000-1,900 to 5,200 in 1977 and 5,900 in 1978, when a third of them were obtained by men. Although still modest, these numbers are far from trivial. Sterilization should gain rapidly in the years ahead if its popularity in Sweden measures up to even half that in the U.S. where a national fertility survey revealed that already in 1976 sterilization was nearly up to pill use among all married couples with wives aged 15-44 (19 percent compared to 22 percent) and far more popular than the pill among couples with the wife aged 35-44 (29 percent versus 8 percent).[48]

The Swedish Institute: Photo by Bengt Malmqvist

Abortion

The increased use of effective modern contraceptive methods coincides with the sharp fall in Sweden's fertility since the mid-1960s. But increased abortion has probably also played a role.

Sweden's abortion law dates back to the 13th century. Abortion was regarded as enough of a public problem for severe penalties to be introduced in the 15th century and the death penalty in the 17th century. The death penalty was eliminated in 1864 and other penalties eased in 1890 and 1921. Although the 1921 law still prohibited induced

abortion under any circumstances, genuine medical reasons had by then come to be accepted unofficially as sufficient justification.

Growing alarm over increasing illegal abortion led to a major investigation in the 1930s and in 1938 Sweden joined Iceland and Denmark as among the first countries in the world to permit abortion under limited conditions: medical (childbirth threatens the woman's life or health); humanitarian (rape or incest); or eugenic (danger of fetal abnormality). A 1946 amendment added sociomedical conditions (the woman's living situation could be taken into account) and another in 1963 accepted probable fetal injury as a sufficient reason. The next major step was the current law, implemented January 1, 1975. Among the world's most liberal, this law specifically recognizes a woman's right to alone decide on an abortion up to the 18th week of pregnancy.

Despite progressive liberalization, the law was interpreted with caution until the early 1960s. Administrative delays were frequent and the number of abortions consequently low: 6,300 at the peak in 1951 and 2,800 in 1960. Up to 1965, more than 85 percent of legal abortions required authorization by the National Board of Health in Stockholm and the remainder required certificates signed by two physicians. Under growing public pressure, practices were relaxed and by 1970 three out of five abortions were being granted by the less time-consuming two-physician procedure, applications increased, and numbers of abortions climbed steeply. By 1974, the year before restrictions were largely eliminated by law as well as in practice, 30,600 abortions were recorded—nearly ten times the 3,200 performed in 1962 (Table 8).

Some observers feel that legal abortions have merely substituted for what would formerly have been illegal abortions in Sweden and consequently have had little net impact on the birth rate. Potts, Diggory and Peel, for example, point out that in the 1930s, before the first liberalization of the law in 1938, numbers of illegal abortions were estimated at 10,000 to 20,000 annually, or 100 to 200 induced abortions per 1,000 live births.[49] This is in the same range as the legal-abortion-to-live-birth ratios of 1968 to 1972 (see Table 8) when the crude birth rate was about 13-14—also virtually the same as in the 1930s. Several Swedish physicians, however, feel the rise in legal abortions reflects much more than just substitution for illegal abortion and thus must account at least in part for the fall in annual births and fertility rates from the mid-1960s to the mid-1970s, although improved contraception was probably equally important.[50]

In years to come, contraception is likely to displace abortion increasingly

Table 8. Births and Legal Abortions: Sweden, 1962-1978

Year	Live births	Legal abortions	Abortions per 1,000 live births
1962	107,284	3,205	30
1963	112,791	3,528	31
1964	122,664	4,671	38
1965	122,806	6,209	51
1966	123,354	7,254	59
1967	121,360	9,703	80
1968	113,087	10,940	97
1969	107,622	13,735	128
1970	110,150	16,100	146
1971	114,484	19,250	168
1972	112,273	24,170	215
1973	109,663	25,990	237
1974	109,874	30,636	279
1975	103,632	32,526	314
1976	98,345	32,351	329
1977	96,057	31,462	328
1978	93,248	31,918	342

Sources: 1962-1975: Olav Meirik, Karl-Gösta Nygren, and Björn Smedby, "Birth Rate and Birth Control in Sweden 1962-1976," *Lakartigningen*, Vol. 75, No. 6 (1978) Figure 1, p. 426; 1976-1978 National Central Bureau of Statistics, *Population Changes 1978*, Part 3 (Stockholm: 1980) Tables 3.19 and 3.24.

as the preferred approach of Swedish women determined not to go beyond their desired number of children, whatever that number may be. Annual numbers of abortions have leveled off since passage of the 1975 law, as also seen in Table 8. This could mean that another major objective of the law has begun to take effect. In addition to providing abortion on demand, the legislation sought to reduce the number of abortions by stressing contraception as the primary means of birth control, with abortion regarded as "an emergency measure." The new sterilization law was seen as part of this larger purpose. Efforts have also been stepped up to expand public contraceptive services by training 600 midwives to do gynecological examinations, insert IUDs, and provide pills, for example. There are now also 20 special family planning centers for young people. Family planning consultations, diaphragms, IUDs, and condoms are free at public health centers and pill costs are subsidized. And by 1977, some 5 million crowns ($1.2 million) had been allocated to increase family planning information, especially among youth and women's organizations.[51]

Mortality Trends

Unlike fertility patterns, recent Swedish trends in mortality have been mostly gradual and consistent and therefore require less attention.

From an average annual rate of 27 per 1,000 population in the second half of the 18th century, the crude death rate declined fairly steadily until it reached a low point of about 9.5 in the mid-1950s. Thereafter, it began to creep up and has been between 10.5 and 11.0 in recent years (Table 1, page 6).

The crude death rate is determined by death rates at each age and the age structure of the population. Age structure influences the crude death rate because death rates are much higher among the elderly than among younger persons. If the elderly portion of the population increases because of declining fertility and hence relatively fewer young people, the crude death rate is likely to rise. This is what has happened recently in Sweden. Until the mid-1950s, the continuing decline in age-specific death rates was great enough to more than offset the inflating effect of the population's aging on the crude death rate. After that, however, the aging of the population accelerated. In 1900, persons 65 and over made up 8.4 percent of Sweden's population. Half a century later in 1950, this portion had increased only 1.8 percentage points to 10.2 percent. But in the next quarter century, the figure grew by 5.3 percentage points to reach 15.5 percent in 1976. This sharp increase was mainly the result of the pronounced decline in the birth rate from the mid-1960s. (See "Changing Age Structure and the Elderly" following.)

The trend in age-specific death rates can be illustrated by life expectancy at birth (the average number of years a newborn could be expected to live if current mortality rates were to continue). This measure is constructed from age-specific death rates of a given year or period and thus conveniently summarizes their level at that time. As age-specific death rates fall, life expectancy rises. Table 9 (next page) indicates that Sweden's age-specific death rates have fall .i steadily since the middle of the last century and life expectancy has risen accordingly, although the gain was appreciably slower after the 1950s. By 1978, life expectancy for Swedish women (78.6 years) was exceeded only by Iceland's (79.2 in 1975-76) and that of Swedish men (72.4) trailed only the figures in Iceland and Japan (73.0 and 72.5 respectively).

Interestingly, Swedish women had a 3.9-year edge over men in life expectancy already in the mid-19th century. The gap narrowed thereafter, but after World War II it widened rapidly, as in

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Table 9. Swedish Life Expectancy at Birth 1851-1978 and International Comparisons

Year	Life expectancy at birth (years)		Sex differential
	Male	Female	(Female minus male)
Sweden			
1851-60	40.5	44.4	3.9
1901-10	54.5	57.0	2.5
1941-50	68.1	70.7	2.6
1951-60	70.9	74.1	3.2
1961-70	71.7	76.1	4.4
1971-75	72.1	77.7	5.6
1976	72.1	77.9	5.8
1977	72.4	78.5	6.1
1978	72.4	78.6	6.2
International Comparisons			
Iceland 1975-76	73.0	79.2	6.2
Japan 1976	72.5	77.4	4.9
Netherlands 1977	72.0	78.4	6.4
Norway 1976-77	72.1	78.4	6.3
United States 1977	69.3	77.1	7.8

Sources: Sweden: National Central Bureau of Statistics, *Population Changes 1978*, Part 3 (Stockholm: 1980) Table 4.17, p. 120; International: Population Division, United Nations, personal communication, May 1980; United States: National Center for Health Statistics, *Vital Statistics of the United States*, Vol. II, Section 5, *Life Tables* (Hyattsville, Md.: 1980).

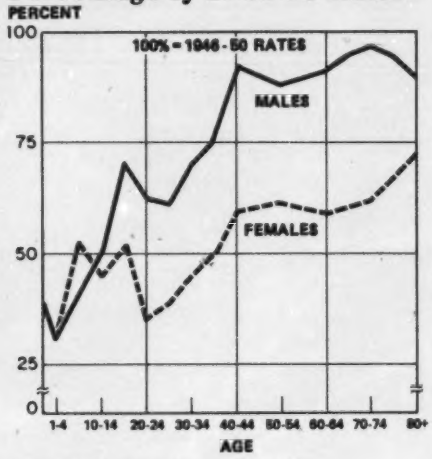
most other industrialized countries, and was over six years by 1978. This is further illustrated in Figure 6. Since the late 1940s, the decline in age-specific death rates has been much greater for females than for males, except among infants and children under 15. The figure also reveals that mortality declines in this period, as in the past, have been much greater for infants and children than for older persons. The decline was least among the elderly aged 65 and over.

Much of the steady gain in life expectancy is due to the historical fall in the infant mortality rate (deaths under one year of age per 1,000 live births). Sweden has the world's longest series of infant mortality data, dating back to the early 18th century. At the end of that century, infant deaths stood at about 200 per 1,000 live births. The rate dropped 100 points in the next 100 years and another some 75 points, to 24, by the late 1940s. The pace of the decline slowed slightly after that but in 1966-70, the rate was down to 12. Contrary to expectations, it has continued to fall rapidly. By 1978, Sweden's infant mortality rate was 7.8 (6.7 for girls and 8.9 for boys)—the lowest rate in the world, as it has been for many years. Next lowest in the world in 1978 was Japan at 8.4; the U.S. infant mortality rate in 1978 was 13.6.[52]

Sweden's ability to keep infant—and all—death rates low is not a recent development. With Norway, Sweden had the lowest infant and child death rates in Europe more than a century ago. A U.S. observer notes:

"Medical care, like education, has been regarded as both a communal responsibility and an individual right in Sweden long before the advent of the modern welfare state. . . . Prenatal care, delivery, and postnatal care

Figure 6. Swedish Age-Specific Death Rates 1972-76 as Percentage of 1946-50 Rates



Source: See Figure 2, Diagram 3.2, p. 21.

have been free and readily available throughout Sweden for many decades. Sustained professional care of pregnant women and later of their babies is universal. Such established and routinized care has not come this far in the U.S., and it is free only for the indigent."[53]

The unexpectedly rapid infant death rate decline of recent years is credited to continued improvements in medical diagnosis and prenatal care. Also important, as noted, is that two-thirds of all births now occur to women in their twenties—ages when the risk of delivery complications are least.

Changing Age Structure and the Elderly

A population's age structure (the relative number of people in different age groups) is shaped by trends in fertility, mortality, and migration. Normally, fertility is the major influence. A sustained high level of fertility produces a youthful population with a large proportion of children and youth. As fertility falls, the population "ages" with a decline in the proportion of young people and a relative increase of persons in the older ages. For Sweden, the series of population pyramids in Figure 7 displays this aging process graphically (next page).

The pyramid for 1900 has the triangular shape characteristic of a youthful population, reflecting the moderately high birth rates (around 30 per 1,000 population) of the second half of the 19th century. The slight break in the pyramid at ages 30-40 is explained by the heavy emigration of young men in particular during the 1880s and 1890s. In the 1950 pyramid, the indentation at ages 10 to 24 reflects the birth rate drop between 1925 and 1940 and the broader base (children under 10) reflects the rising birth rates of the 1940s.

With the lengthening period of low fertility, Sweden's population pyramid was beginning to assume the rectangular shape of a "stationary" population by 1977. The numbers of people in the younger ages were more nearly equal to those in the older age ranges. The pyramids for 2000 and 2025 are based on the main population projection described earlier which assumes a total fertility rate rising to 1.8 in 1985 and constant thereafter and no net immigration after 1985. Sweden's actual population age structure in 2000 and 2025 will probably turn out to be more irregular than depicted here because fertility will undoubtedly not remain unchanged. However, the fluctuations should be more modest than previously and the level of fertility could very well remain low. This would result in a continued equalization of age cohorts and an increased aging of the population.

Average population age and proportion of elderly

In 1900 already, 30 was the average (mean) age for both men and women. By 1950, the average was up to about

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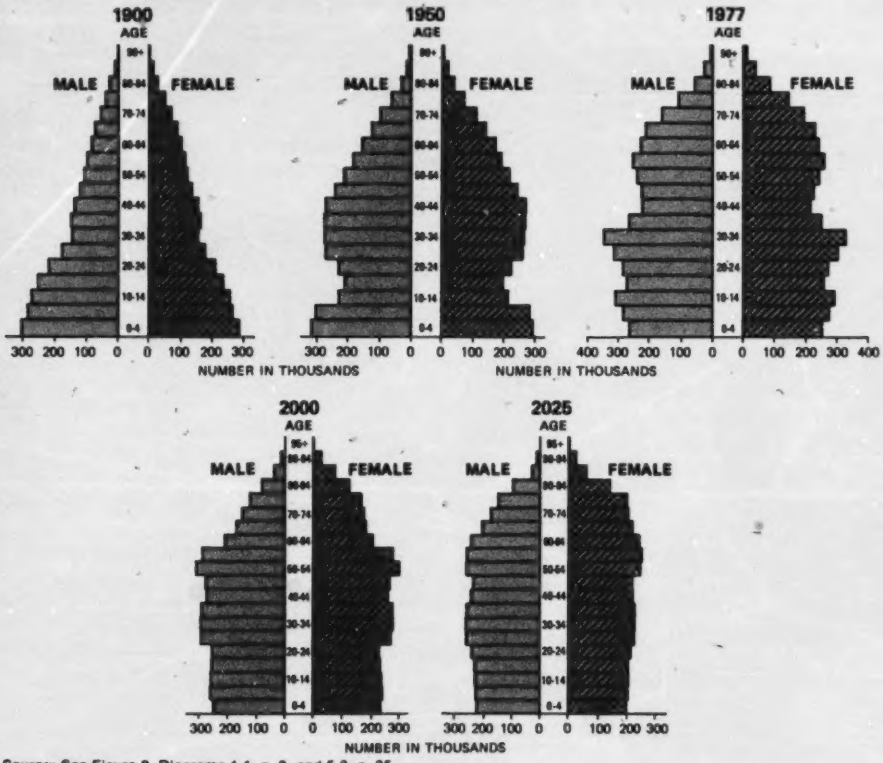
Figure 7. Sweden's Population Age Structure 1900, 1950, 1977, and as Projected for 2000 and 2025



Source: See Figure 2, Diagrams 1.1, p. 8, and 5.3, p. 35.

35 years. In 1977, it stood at 37.0 for men and 39.2 for women. (The *median* age of Swedish men and women in 1977 was about 35, compared to a median of 29.4 years for the U.S. population in 1977.) If the current medium population projection holds (a constant TFR of 1.8 and no net immigration after 1985), the figures for 2025 will be 40.4 for men and 43.4 for women.[54] The higher population projection, which assumes a constant TFR of 2.1 after 1985, would reduce the 2025 figures by about three years and the lower projection of a constant TFR of 1.5 would add about three years. The population's average age would also be lower in 2025 if Sweden continues to have some net immigration. Net immigration has a significant rejuvenating effect on a population because immigrants tend to be mostly young adults and children. Also the fertility of recent immigrants to Sweden has been higher than that of native Swedes, as noted in the next section.

Sweden's rising average population age of course reflects increasing pro-

portions of the elderly. As noted, the proportion of persons of retirement age, 65 and over, nearly doubled from 8.4 percent to 15.7 percent between 1900 and 1977. (In the U.S., the proportion of the population in this age range is currently about 11 percent.) At the same time, however, the proportion of youngsters under age 15 declined by a greater amount—from 32.4 percent to 20.4 percent, or 12 percentage points. As a result, the ratio of people in the "economically productive" ages (15-64) to those in the "dependent" ages (under 15 and over 64) became increasingly favorable during the first three-quarters of this century. However, the easing of the dependency load that might have resulted from these shifts in age structure was offset by the extension of education—especially higher education—and the development of a national pension system. Young people began to stay in school longer and older people retired earlier.

If the main population projections materialize, the proportion of persons aged 65 and older will rise slightly to 16.4 percent in 2000 and then jump to 20.0 percent in 2025. The proportion of children under age 15 will decline continuously while the percentage of working-age adults would first rise a bit and then decline.

Within the working-age proportion of the population and among the elderly group there have been and are projected to be important variations. The working-age population itself has aged and will continue to do so over the 1977-2025 period, with a decline in the proportion aged 15 to 39 and increases in the relative numbers of people 40-64 years old. Similarly, the group of 65-and-overs will grow older. The total number of persons in the retirement ages, 65 and over, will increase by 260,000 from 1.30 million to 1.56 million between 1977 and 2025. But some 235,000 of that increase will come among the elderly who require the most costly services, those aged 75 and over. Further, most of this increase will occur during the decade before 1990. More troublesome still is the foreseeable increase of the very old, aged 85 and over, from 90,000 in 1977 to 160,000 in 2000, a growth of almost 80 percent.[55]

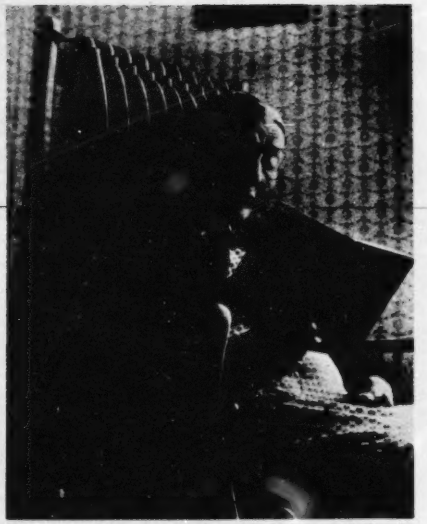
Cost of elderly support

Regarding his country's demographic outlook, Swedish demographer Ingvar Holmberg comments:

> "Despite the somewhat gloomy picture sometimes painted, there is probably no one who really believes in a picture of Sweden as a country with an increasingly declining population, populated mainly by old people and only a small number of children: a country where the former day nurseries are used as pensioners' dwellings and where industry is kept going by an increasingly aging workforce."[56]

The figures on the elderly cited above, however, are numbers, not percentages. Thus even in the unlikely event of a sudden rise in the birth rate, there is no escaping the added burdens of care and cost that will come with the rapid increase in absolute numbers of the aged whatever may happen to their *relative* numbers. That the increases will be particularly rapid during the 1980s is unfortunate, given the difficulty Sweden, along with the other Scandinavian welfare states, is currently experiencing in meeting the mounting costs of inflation-bloated social benefits. From this perspective, Sweden would be better off with no immediate reversal in its declining birth rate for that would increase the absolute and relative number of youthful dependents without diminishing the absolute number of aged dependents. Between 1990 and 2005, the number of elderly will decline somewhat with the entry into retirement age of the smaller birth cohorts of the 1930s. At that time, other things being equal, an increase in the birth rate would be more affordable.

Sweden is already experiencing what Holmberg terms a "crisis" in finding



The cost of supporting the elderly is escalating in Sweden and is destined to rise still higher with the projected increase in the number and proportion of elderly persons.

enough staff to provide the medical and long-term care needed by the very old. But overwhelming this is the escalating financial cost of supporting retired persons. The official age for retirement was lowered to 65 in 1976, confirming what had actually been long-standing practice for most workers. All retired persons 65 and over receive a basic pension and, if they have worked, a supplementary pension. The two pensions together add up to two-thirds of the average income received during a person's 15 best-paid working years. Since 1976, employed persons aged 60-65 have also been permitted to cut down on working hours, receiving a partial pension in return. In early 1978, there were about 1.6 million full or partial pensioners compared to just over 4 million employed persons. All three pensions are adjusted upward monthly to keep up with inflation.

Sweden's bill for all social welfare costs in 1975 totaled 71.2 billion crowns ($17.1 billion at the current exchange rate of 24¢ per crown), representing an outlay of 8,680 crowns or $2,080 per capita and one-fourth of the country's gross domestic product. Of this, some 21 billion crowns went for pensions. Another 3 billion was spent for homes and other special assistance for the aged, and "sickness" benefits for persons 65 and older are estimated at an additional 10 billion crowns. Thus, some 48 percent of Sweden's total social welfare budget of 71 billion crowns in 1975 went for support of the elderly.[57]

Both the share of the budget and amounts spent on the elderly have escalated since then. In just the three years between 1975 and 1978, total social welfare expenditures increased by a fifth (71.2 to 87.0 billion crowns) but the cost of basic pensions climbed by half (15.8 to 23.5 billion) and the outlay for supplementary pensions went up nearly 150 percent (5.0 to 12.3 billion crowns).[58] Obviously the needs of its growing elderly population have much to do with Sweden's budget deficit which in 1980 amounts to 10 percent of the country's gross national product (compared to a budget deficit of less than 2 percent of GNP in the U.S.).[59] And that elderly population is destined to grow relentlessly over the coming decade.

International Migration

As we have seen, immigration and emigration have played important roles in Sweden's population growth. Emigration predominated until 1930, helping to relieve the pressure of the growing population on the meager resources of the poor agrarian society of the 19th and early 20th centuries. But in the past 50 years, mainly because of the rise in levels of living that accompanied social and economic development, Sweden

has become an immigrant rather than an emigrant society. Coming at a time when its natural increase has reached low levels, net immigration has thus been increasingly responsible for continued Swedish population growth. It has also begun to reduce the high degree of ethnic, linguistic and cultural homogeneity that has prevailed for centuries in Sweden, prompting a growing concern about the future character of the society.

In the poor agrarian society of the mid-19th century, there were many who were attracted to the opportunity to better themselves in the U.S. The trickle overseas began in the 1840s and grew modestly until a famine in Sweden caused an explosion of emigration in the late 1860s. After a brief slowdown, "America fever" reached its heights for about 15 years, beginning in the late 1870s. The volume of emigration was much lower thereafter, except during the first decade of the 20th century and briefly in the early 1920s following World War I.

All told, from 1865 to 1930, nearly 1.4 million Swedes left their country. Close to 400,000 later returned. Since Sweden's population averaged about five million during this period, the one million net emigrants were obviously a considerable loss, particularly since most were young adults. There was not only the direct loss of the emigrants themselves but also the indirect loss of their descendants. It has been estimated that:

"If an attempt had been made in 1850 to make a projection of the trend of population in Sweden up to the beginning of the 20th century, the following figures would have been produced:

1900 6.5 million
1910 7.4 million.

In these years, the actual population counts were:

1900 5.1 million
1910 5.5 million.

. . . The 'loss' of nearly two million [as of 1910] was attributable to rather more than a million emigrants and their decendants."[60]

From emigration to immigration

Emigration slowed in the late 1920s after passage of restrictive immigration legislation in the U.S. in 1923 which reduced the opportunity for Swedes to leave for what had long been their favorite destination. (Previously over 80 percent of Swedish emigrants had gone to the U.S.) High unemployment in the U.S. during the Depression of the 1930s further reduced that country's attraction for Swedish emigrants. (Indeed, many Swedes left the U.S. for Sweden during this time.) Nor were other countries attractive sites for relocation during the 1930s. Finally, emigration was virtually extinguished during the World War II years of 1939 to 1945. (However, many refugees came to Sweden during those years.) After the war, the Swedish economy expanded rapidly, and the demand for labor outstripped the supply. There were jobs for everyone—indeed, a substantial need for foreign labor—at increasing levels of pay. Sweden became a country to go to, not one to leave.

Refugees were the main type of immigrants in the 1940s, but foreign workers predominated during the next two decades. Total net immigration for these decades was:

1940s	134,000
1950s	106,000
1960s	235,000

During the 1950s, the foreign workers came primarily from West Germany and the other Nordic countries (Finland, Norway, Denmark, and Iceland), especially after 1954 when an inter-Nordic free labor market was established.

Two major waves of immigration highlighted the 1960s. The middle of the decade saw a sharp influx of workers from Southern Europe, especially Yugoslavia, Greece, Italy, and Turkey. Immigrants from these four countries went from less than 3,500 in 1964 to 9,000 in 1965 and over 12,000 in 1966. An economic boom in the late 1960s

attracted a second, considerably larger wave. For 1968-1970, the annual average totaled close to 70,000, up from some 42,000 during the preceding three years. Finns, who had been the largest group of immigrants for some time, comprised over half the total in this wave.

With the fading of the boom, immigration subsided to nearly 30,000 in 1972 and 1973. Although it went up again to about 45,000 per year in 1975-77, the peak was substantially less than that of the late 1960s. This reflected stricter application of restrictive regulations adopted in 1967 as the business cycle headed down again during the early 1970s. Prompted by concern over the impact of growing immigration on social welfare, housing, and employment opportunities for "marginal" Swedish workers, i.e., women, the elderly, and the handicapped, these regulations required non-Nordic citizens to have jobs, labor permits, and housing all arranged before entering Sweden.

These became increasingly difficult to get during the 1970s. As a result, the number of immigrant workers entering Sweden from non-Nordic countries dwindled to almost nothing. However, there was a considerable increase in refugees. Between 1974 and 1978, Sweden took in almost 12,500 Latin Americans, for example, most of them refugees fleeing government upheavals, particularly the ousting of Chile's President Allende in 1973.[61] Relatives of immigrants already in the country have comprised another substantial category of recent immigrants. With these two categories now making up larger fractions of total immigrants, the relationship between the business cycle and immigration has weakened. Finns remain the largest single national group of immigrants, comprising at least a quarter of the total each year. Citizens of other Nordic countries, while also continuing to enjoy the freedom of movement of the Nordic common labor market agreement, have come in more modest numbers (except for the 17,000 Danes who found economic conditions at home too depressing in 1974 and 1975).

Emigration has generally amounted to less than half the volume of immigration in the post-World War II period except for 1971 when immigration exceeded emigration by only a few thousand, and in 1972 and 1973 when the outflow exceeded the inflow by about 11,000 each year, the only two years of migration loss since 1929.

The figures on emigration largely reflect return migration. Almost half of postwar immigrants have emigrated after a short time in Sweden, most often in the year following the one in which they came. Immigrants from Northern Europe have been much more likely than those from Southern Europe to return home. With return migration accounting for so much of emigration, the size of each year's outflow has been closely related to the size of the inflow in the immediately preceding years. Thus the large increase in emigration in 1971-73 is partly explained by the large increase in immigration in 1968-1970. And as immigration fell subsequently, so did emigration.

Demographic impact of immigration

Table 10 lists the numbers of foreigners in Sweden at the end of 1977 by country of origin. As might be expected, Finns comprised by far the largest proportion: 45 percent of the total of 424,400. Yugoslavians, the next largest group, made up just under 10 percent. In 1977 there were also an additional 300,000 immigrants who had become naturalized Swedish citizens and another some 300,000 persons who were born as Swedish citizens but who had a mother or father who was not a citizen. Currently, it is estimated that over a million of the 8.3 million people in Sweden—or as many as one in every eight persons—are either immigrants themselves or children of postwar immigrants.[62] Al-

Table 10. Foreign Citizens in Sweden by Country of Origin: December 31, 1977

Country of origin	Number	Percent
Finland	188,972	44.5
Yugoslavia	40,796	9.6
Denmark	34,268	8.1
Norway	27,356	6.4
Greece	18,361	4.3
West Germany	16,147	3.8
Turkey	13,372	3.2
Poland	8,609	2.0
Great Britain	8,347	2.0
United States	6,102	1.4
Italy	5,749	1.4
Austria	3,790	0.9
Hungary	3,102	0.7
Other	49,989	11.7
Total	424,445	100.0

Source: National Central Bureau of Statistics, *Population Projection for Sweden 1978-2025 (Information i prognosfrågor 1978:5)* (Stockholm: 1978) Table 4.2, p. 29.

though the population is still highly homogeneous, this is a big change from the 1930s when the shift from emigration to immigration began. At that time, less than 0.3 percent of the population held foreign citizenship (compared to 5.1 percent in 1977) and the numbers of naturalized citizens and immigrant children were probably equally negligible.[63]

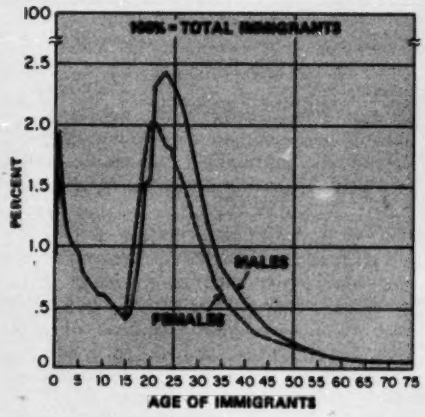
The demographic impact of the large postwar immigration has obviously been substantial, via natural increase as well as the direct gain from the excess of immigrants over emigrants. From the beginning of 1944 to the end of 1977, the excess of immigrants over emigrants amounted to half a million (the difference between some 1.1 million in and 0.6 million out) or about 29 percent of the 1.74 million added to the Swedish population in those 34 years. If one also takes into account the natural increase (excess of births over deaths) of immigrants, the contribution of immigration to the growth of 1.74 million in this period was fully 800,000, or almost 46 percent, with natural increase making up about 17 percent of the gain.

As is often the case, a large proportion of the migrants have been young adults (Figure 8). This younger average age of the aliens means that their crude death rate is considerably lower than the rest of the Swedish population (even though their age-specific death rates are a little higher than those of Swedish citizens). At the same time, the fertility of foreign women in Sweden is greater than that of Swedish women. In 1978, for example, total fertility rates per woman by country of citizenship were:[64]

Sweden	1.56
All other	2.12
Including:	
Denmark	2.00
Finland	1.79
Norway	1.87
West Germany	1.93
Greece	2.72
Yugoslavia	2.10
Turkey	5.23

It follows that the rate of natural increase is much lower for Swedish citizens than for aliens residing in Sweden.

Figure 8. Age Distribution of Immigrants to Sweden: 1973-1977



Source: See Figure 2, Diagram 4.3, p. 29.

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Table 11. Natural Increase Among Swedish Citizens and Aliens in Sweden: 1971-1978

Year	Excess of births[a] over deaths		
	Swedish citizens	Aliens	Total
1971	22,116	9,651	31,767
1972	19,194	9,023	28,217
1973	15,779	8,244	24,023
1974	15,365	8,193	23,558
1975	7,266	8,158	15,424
1976	– 600	8,268	7,668
1977	– 232	8,087	7,855
1978	– 4,602	8,169	3,567

Sources: National Bureau of Statistics, *Population Changes*, Part 3, for each of the years listed above.

[a]Births according to citizenship of the mother.

In 1972, natural increase was 3.1 per 1,000 for Swedish citizens and 23.3 per 1,000 for aliens.[65] As we have seen, Sweden's total rate of natural increase declined steadily throughout the 1970s and has been below one per 1,000 population since 1976 (see Table 1, page 6). The more detailed data shown in Table 11 reveal that the decline was caused by a steady fall in the natural increase only of Swedish citizens. Every year from 1976 to 1978, at least, there were fewer births than deaths among the Swedish majority of the country's population, especially in 1978. The fact that overall natural increase has not yet turned negative is thus entirely due to continued natural increase among the small alien minority.

Currently, then, all of Sweden's low population growth is dependent on immigration. Of the 2.29 per 1,000 total population gain in 1979, a quarter (0.59 per 1,000) was due to natural increase (among aliens only) and the other three-quarters (1.69 per 1,000) was due to net immigration (Table 1). Consequently, unless the fertility of Swedish citizens increases considerably, Sweden is faced with a dilemma. On the one hand, if it substantially reduces the volume of net immigration, its population may well decline. On the other hand, if it continues to accept the volume of net immigration that has prevailed during the 1970s, let alone during the whole postwar period, and if current trends in natural increase persist, it is faced with a challenge for which its history has not prepared it: how to go about incorporating foreigners into Swedish society. Indeed, even if there were no net immigration, the Swedish population would continue to become more heterogeneous if natural increase continues to be negative for Swedish citizens, the vast majority of whom have been born in Sweden to Swedish parents.

Immigration Policy

Sweden's shift from an emigration to an immigration country was not the result of conscious policy. Rather, an immigration policy has evolved after the event and can be traced through three periods: 1944 to 1963, 1964 to 1973, and 1974 to the present.

Immigration during the first 20 years was largely in response to Sweden's feeling of a moral obligation, as a neutral nation spared the ravages of World War

II, to accept displaced persons and refugees and its great postwar need for labor to maintain the rapid pace of economic expansion. No one at the time recognized what is now seen as the beginning of a persistent process with profound implications for Swedish society. International migration was not even taken into account in population projections until the 1960s.

The unexpected sharp increase in net immigration from 106,000 in the 1950s to 235,000 in the 1960s led to the concern over the threat which immigration posed for Sweden's well-established welfare state that characterized the second period (1964-73). Efforts were begun to provide foreigners with the same benefits and protections enjoyed by Swedish citizens lest they become an exploited, problem-ridden underclass. In the late 1960s, however, the main preoccupation was how to facilitate immigrants' "social" adjustment. Should they be "assimilated" (i.e., become Swedish in every respect, giving up the language and culture of their home countries) or "integrated" (allowed to maintain their distinctive group ethnic identities)? As a result of this "melting-pot" debate, a Commission on Immigration was established in 1968 to investigate what public measures should be taken on behalf of immigrants and ethnic minorities.

The commission's final report, issued in 1974, gave the preference to integration. Widely accepted by the public and government, this led to passage in 1975 of a bill which defined Swedish immigration and minority policy for the first time: *equality* between immigrants and Swedes, cultural *freedom of choice* for immigrants, and *cooperation and solidarity* between the native Swedish majority and various ethnic minorities. Thus "it was finally officially stated that immigration was beneficial to Sweden" for its cultural as well as economic contribution.

To implement this policy emphasis on ethnicity and pluralism, all Swedish municipalities have been required since 1977 to provide immigrant schoolchildren with several hours per week of instruction in their native languages.[66] In 1977, 30,000 students received instruction in over 50 languages. On the other hand, programs have been established to help immigrant adults learn Swedish and a 1973 law requires employers to give immigrant employees 240 hours paid leave of absence to attend free lessons in basic Swedish.

State grants are also provided to immigrant and ethnic minority organizations, which have a combined membership of 80,000. State support also goes to the ethnic press and theatrical activities, publication of literature in minority languages, and to public libraries to buy foreign literature.

An important goal of the 1975 policy was to increase immigrants' opportunities to participate in political decision-making. The right to vote and run for local or regional office was granted to all aliens who have lived in the country for at least three years, a step which the Swedes claim to be the first to have taken. In the 1976 election when the law went into effect, 60 percent of 220,000 eligible aliens voted and some 400 immigrants were elected to public office.

Although it is too soon to make a final judgement, there are indications that a substantial gap still exists between the policy goal of integration with equality, cooperation, and immigrant freedom of choice and its realization. A Swedish reporter observes, for example, that the law entitling foreign workers to 240 hours of Swedish language instruction during paid working hours has "turned into a fiasco" because "companies try to get round the law . . . by not hiring people who have not already received this instruction."[67] David Schwarz, publisher of the *Scandinavian Migration and Ethnic Minority Review* [Invandrare och minoriteter] and himself an immigrant, went much further in 1979, claiming that:

"Now, three years after the formulation of the lofty goals for immigration . . . everything has continued more or less as it was before. In practice, the school still works towards making immigrant children Swedish and the authorities still continue with their old policy of trying to 'solve' the problems of the immigrants without inviting the participation of the immigrants themselves."

Of the one billion crowns per year currently spent on measures relating to immigration, he asserted:

"Most goes . . . to solving the immediate problems that arise in connection with the move to a new country (instruction in Swedish, information about Swedish society, work, housing, etc.) at the expense of the long-term aspects of the situation such as cultural and educational problems, equality, and relations with the majority of the population. As a result, the feeling of 'foreignness' is central to the way immigrants perceive themselves as well as to how they are regarded by Swedes."

He continued:

"The situation has already gone so far that there is a great risk of its developing into a very explosive and intractable social problem. From there, it is not such a long step to the policy of throwing out immigrants when they are no longer needed in Sweden, as is done in many other countries."

The de facto practice of assimilation "must be abandoned," he asserted:

"and immigrants must be allowed to become an integrated part of Swedish society on the same conditions as the Swedes themselves. Unfortunately both the political will and the public support for pursuing such a course are still lacking."[68]

Five Members of Parliament interviewed during the campaign preceding the September 1979 parliamentary elections confirmed the lack of political, if not public, concern for the "unsatisfactory lives and circumstances of immigrants."[69] Former Social Democratic Deputy Minister of Immigrant Affairs Anna-Greta Leijon noted: "As a politician you don't become popular on immigrant issues . . . But a lot of people admit that they're important, and there's a lot of discussion about them." Another MP observed that immigrants "aren't exactly vote-catching" perhaps in part because 400,000 of the then 700,000 adult immigrants still had no right to vote in parliamentary (i.e., national) elections. (In 1979, only the Communist Party favored granting such a right.) The then Deputy Minister of Immigrant Affairs, Eva Winther, felt that political disinterest in immigrant matters merely reflected "the distance that exists between Swedes and immigrants." All five MPs agreed that relations between Swedes and immigrants needed to be improved, that immigrant issues were important despite their lack of political salience, and that the consequences of not solving them would be serious.

Swedish Information Service

Integrating immigrants into Swedish society has caused problems, despite conscientious policy efforts. But without immigration Sweden's population could decline sooner and faster than projected.

Although immigration issues are not yet as political in Sweden as in the U.S., they are equally vexing and visible. In both countries, they have profound and pervasive implications for the nation, provinces (states in the U.S.), and the local community and require a coordinated strategy between the three levels of political action to tackle suc-

cessfully. Immigration concerns also influence and are affected by important international relations, a fact which constrains what unilateral action these two "receiving" nations might take. In sum, immigration problems in both countries are likely to get worse before they get better. And it probably will require major changes in the perception and evaluation of immigrants, much hard work, and the expenditure of a lot of money before the situation improves.

Recent Population Debate

Immigration issues

As the preceding section suggests, much of recent public discussion of population issues in Sweden has focused on immigration. With the labor needs of the 1950s and 1960s replaced by the growing economic difficulties of the 1970s, free labor immigration from non-Nordic countries has been eliminated. However, the humanitarian willingness of Swedes to accept refugees has compensated considerably for the decline in non-Nordic immigrant workers as has their willingness to admit relatives of immigrants. (An "educated guess" puts the proportion accounted for by these two categories at almost 60 percent of the 39,000 immigrants in 1977.[70])

Although legislation has been enacted to cope with the threat to Sweden's social welfare standards which would be posed by large-scale immigration if immigrants were exploited and to enunciate and implement a policy of integration stressing ethnicity and pluralism, a "lively debate . . . on the lives and circumstances of immigrants" is still being conducted.

"Swedish newspapers often write about individual deportation cases and occasionally about the lives and circumstances of immigrants generally. Among ordinary people and among politicians, immigrants are a topic of heated, passionate and frequent discussion.

What do people discuss? The native languages of immigrants. How far should we pursue the demand that immigrant children be entitled to learn their home language? Should they attend their own day-care center groups and school classes, where their home language is spoken?

Why do immigrants have such a hard time with the Swedish language, and why has the law entitling them to 240 hours of Swedish language instruction during paid working hours turned into a fiasco?

Should immigrants have the right to vote in Parliamentary elections?

Is there widespread racism in Sweden? If so, why, and what can be done to end it?"[71]

Facing zero population growth

Although the heavy net immigration of the 1960s had a considerable impact on population growth, immigration issues were not then discussed in relation to population growth. Population growth became an issue only in the mid-1970s, stimulated by publicity surrounding the World Population Year and the United Nations World Population Conference of 1974 and the steady decline in the birth rate from 1971 on.

Two main lines of argument have characterized the ensuing discussion. One contends that measures are needed to prevent population decline because the decline itself and associated aging of the population would lead to economic stagnation and increasing inequities in income distribution. The other line sees fertility decline as an indication of a social problem which could be solved by improving the social and economic situation of families with children and by making society a friendlier place for children. (Sweden has now gone much further than most nations in making society at least less inimical to children. Since 1973 there has been an "ombudsman" for children, and a governmental Commission on Children's Rights pushed through a "no-spanking law" in

1979 and currently proposes legislation to permit children to divorce their parents.)

Much of the lively debate has been carried on in the press, with particular attention focused on possible reasons for the fall in fertility. A major reason given is the economic disadvantages of having children under existing conditions, even with generous child-related government support. Maintaining Sweden's welfare state costs workers over half their total earnings in national and local taxes, with many above-average wage earners paying much more than that. And with inflation and a standard sales tax of 20 percent, prices are high for many staples: new automobiles, for instance, cost from $10,000 to two or three times that much, gasoline has been at least $2 a gallon for many years, and steak costs about $8 a pound. Other reasons conjectured for falling fertility include the problems of juggling home duties with a job for the rapidly increasing proportion of Swedish women entering the labor force, the much greater availability since the 1960s of effective contraception and legal abortion (facilitating the achievement of desired family size), the shift in the source of care and support of the elderly from one's children to society, and even a possible women's protest against a male-dominated society. On the last point, a woman's journal editor argues:

> "Women are tired of bringing children into a society where they are not welcome. They want to give their children a complete life. If they cannot get men to share the housework and child care, if there are insufficient good day nurseries, if both parents are not given time to be with their children (because they both have to work), then women will refrain from having children, however much they want them."[72]

Regarding the consequences of the decline in the birth rate, Ingvar Holmberg sees "two almost diametrically opposite views," one held by the older generation and the other by younger adults.[73] The former foresee long-run difficulties because of the adverse effects of age structure changes on the supply of labor and society's ability to care for the sick, the elderly, and children. The latter counter that Sweden already has major shortcomings in the care sector which have nothing to do with fertility decline. The chronic shortage of staff must be solved by organizational changes, they say. As for labor supply, these younger adults contend that a proposed shortening of the work week to 30 hours would affect the volume of available labor much more than a continued fall in fertility. On the other hand, "a sharp increase in the birth rate would lead to difficulties for the educational system and for new entries to the labor market when the large number of children born grow up."[74]

Not surprisingly, defenders of these two positions also disagree on the desirability and feasibility of influencing the current population trend. Those concerned about declining fertility favor measures to improve the economic situation of families with children by granting parents extra credit toward the national supplementary pension and providing them with more favorable tax regulations and larger child subsidies. It has also been suggested that child-bearing and rearing should be made more compatible with parents' labor force participation by shortening the work day, providing sufficient day-care service, and making it easier to get help or time off when children are sick. On the other hand, those who do not believe the birth rate decline is having or will have seriously adverse consequences see no good reason to try to reverse the trend. The adverse effects of low fertility, in their view, can be handled by planning. And it is easier to do this than to cope with the consequences of fertility fluctuations.

Finally, there has been disagreement as to the desirability and feasibility of relying on immigration to solve the problems of population decline and labor

supply. Those who favor this solution note the economic advantage to Sweden of gaining adult workers for whom the childrearing and education costs have been borne by other countries. This view is countered by the observation that the sending countries are becoming increasingly aware of the loss which they suffer because they bear such costs and because their emigrants are often skilled workers whom they need. In addition to the growing demand for compensation from sending countries, there is the danger of becoming too dependent on the labor of foreign citizens whose continued services cannot be assured. And there is concern about the impact of increasing heterogeneity resulting from continued immigration, in particular the difficulties of learning to accept and live with people whose physical appearance, language, and culture are different.

Conclusion

Historically low fertility and unprecedentedly high net immigration have clearly posed serious problems for Sweden in recent years. Swedes may disagree on the nature of the problems, how serious they are, and what action should be taken. Still, they have recognized the importance of the issues and have taken action on immigrant problems, admitting the probable need for more action there. Nothing has yet been done about fertility, but Parliament and the public have been paying increasing attention to the birth rate decline and its implications. Several bills concerning fertility have been introduced in Parliament and, if natural increase turns negative, new legislation seems likely.

One reason for their difficulties in deciding what to do about fertility is that Swedes know little about it because they have neglected to study it. (Indeed, with some notable exceptions such as the historians of Uppsala University who have been studying emigration to the Americas for many years, demography has been neglected generally. This is surprising in view of Sweden's long record of reliable demographic data and outstanding analysis of them done in the past.) The oversight has now been recognized by Parliament and the government, however, and efforts begun to rectify it. Under way is a National Central Bureau of Statistics study of the causes of fertility decline. This has three stages. Already completed and reported is the first stage which called for a review of Swedish and international trends in fertility and of the literature on the dynamics of fertility in order to construct a theoretical framework and hypotheses for further research and testing on the determinants of fertility decline. The second and third stages comprise an analysis of the demographic and socioeconomic aspects of fertility changes based on existing data from recent censuses, which Sweden now conducts every five years, and other files, and a survey to gather data directly from individuals and households.

With immigration, in contrast to fertility, the central problem is not theoretical understanding of its causes but rather how to deal with the practical consequences. It took two decades for Swedes to recognize the pervasive and enduring implications of their fundamental shift from an emigrant to an immigrant society. Was this also due to the neglect of demography? Or does it reflect social scientific neglect of ethnic differentiation, which would not be surprising in an extremely homogeneous society? In any case, Sweden has now begun to make up for lost time in the realm of immigration with the development of a systematic policy and programs to implement it.

The legislated objectives—equality, freedom of choice, and cooperation—are admirable. So far these appear to be more promise than fulfillment, but more than a good beginning might hardly be

expected in such a historically short time as 15 years. For a citizen of the United States there is much to admire in the Swedish record. Despite a far longer history of immigration and heterogeneity, this country has made much slower progress toward a set of policies designed to ease immigrants' social adjustment, let alone one so attractive as Sweden's.

Another lesson that might be drawn from the Swedish record is the part international immigration could play in staving off actual zero population growth in countries now experiencing very low fertility and the profound effect immigrants might have on the nature of a ZPG society once reached. The subject tends to be neglected in the literature on the ZPG society, at least by demographers who either omit international migration altogether in their theoretical models or make conveniently simplified assumptions about it.

Another implication of the Swedish case for characterizations of the ZPG society is that the aging of the population will be greater than has been contended, at least by Lincoln Day in his 1978 *Population Bulletin*, "What Will a ZPG Society Be Like?" In his "hypothetical stationary population," Day calculated the proportion of the population aged 65 and over as 15.2 percent, pointing out that this was little more than the 14.8 percent of the population in this age range in Sweden in 1974. Only three years later, in 1977, this percentage was already up to 15.7 percent in Sweden and although it is expected to rise to only a little over 16 percent by 2000, the projection for 2025 is 20 percent.

For whatever reasons, this is much larger than the 15.2 percent of elderly persons in Day's hypothetical ZPG population. If the age structures of ZPG populations turn out to be more like that projected for Sweden in 2025 than that of Day's model, the impact of an aging population is likely to be much more pronounced than Day has conjectured. As a test case, Sweden bears watching. □

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